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ART. I.—*Notes on Medical Matters and Medical Men in Paris.*—By DAVID W. YANDELL, M.D., of Louisville, Ky.

The following case which occurred in the wards of M. Grisolle, at La Charité, appearing to me of considerable interest, I have copied my notes of it with the view of offering them to the readers of your Journal, at the same time that I have to ask them if they have met in practice or books with any analogous example. So far as my own knowledge extends, it is unique in the annals of medicine:

A woman, aged 49 years, of good constitution, and in the constant enjoyment of health until about four years ago, since which time she has suffered continually from sensations of suffocation, unaccompanied by palpitations, from frequent vomitings, and on several occasions from slight hemoptysis, entered the hospital a fortnight since. Before going further,

I may remark that, the account given by the patient of herself is in every respect deficient and unsatisfactory.

Two weeks previous to her admission into the hospital all the phenomena of which I have made mention were augmented; there was a violet hue and tumefaction of the face and right arm; œdema, commencing at the shoulder and neck, occupying the left arm, though to a less extent than the right, and extending to the anterior portion of the trunk, being particularly well marked in the mammæ. For these symptoms she was ordered to be bled, purged, and leeched.

The patient entered the hospital in a state of extreme anxiety, her face swollen and violet colored. She was immediately bled, and at the morning visit M. Grisolle detected the following:

Œdematous tumefaction of the face and arms, especially of the right arm; of the subcutaneous cellular tissue of the breast in front, less posteriorly. Further, there is extreme development of the subcutaneous capillary net-work, especially on the right side; and the veins are prominent. The conformation of the chest, so far as the œdema admits of its being judged, is normal. Thoracic resonance good in front on the left side; on the right side, obscurity of sound, especially in the submammary region, and also in the *superior half of the sternum*, where the respiratory murmur is very feeble and remote. There is nothing notable in the circulatory system; the pulse is equal on both sides, firm, beating eighty times per minute; the beats of the heart are of moderate force, the sounds are heard under both clavicles; digestive functions good; intelligence clear. Nothing on the part of the brain.

M. Grisolle went at some length into the differential diagnosis of those affections to which this might be deemed analogous, and his remarks being more than usually interesting, I trust that a brief reproduction of them will be acceptable.

He barely made mention of Bright's disease, and examined the urine, he said, only for form's sake. In the majority

of cases in which it is observed, dropsy, which is always the symptom of an organic alteration, recognises as its cause an obstruction of the circulation. But where is this obstacle situated? The idea of an affection of the heart cannot be admitted in the present instance. The œdema symptomatic of a cardiac affection almost always commences in the inferior extremities, and progresses from below upwards. In the case in hand it interests only the superior part of the trunk.

Since, then, it is not in the heart, we must seek the cause in the venous system. The œdema symptomatic of an obstacle in the venous circulation, which it has been pretended, we know not on what grounds, is a recent discovery, will be found a point insisted on at some length in the works of Boerhave, Van Swieten, Morgagni, and Cullen. The veins are very active agents of absorption. When circulation in them is obstructed, absorption no longer goes on; the cellular tissue becomes engorged with serum, and thus we easily comprehend the mechanism of the production of dropsy. By a wholesome provision of nature the collateral circulation is not unfrequently augmented, and in some rare instances this development of the auxiliary veins may amount to an absolute relief of the disease. There are cases, exceedingly rare, it is true, where the inferior vena cava has been completely obliterated without there resulting any œdema. M. Grisolle himself observed an example at Beaujon hospital in which the collateral circulation was developed to the point of completely supplying the loss of the diseased vein.

In the case before him, said M. Grisolle, from the fact of the œdema being confined to the superior part of the body, and the exaggeration of the supplementary circulation, the obstacle cannot be elsewhere than in the superior vena cava.

Another question is, what is the nature of the obstacle? Is it internal or external to the vessel? If on its interior, it may arise from polypiform concretions. But these are lesions as rare as they are spontaneous. They cannot, in this

case, be the consequence of a phlebitis, for a spontaneous phlebitis is of too rare occurrence. Is there, in fact, a single well authenticated case of primitive inflammation of the venæ cavæ? Moreover, there would have been a development of acute symptoms, and the patient would have inevitably perished. In its antecedents there is nothing which indicates an acute disease.

Can this, then, be an external compression? In nine instances out of ten this is the case. Sometimes it is a goitre which is developed on the anterior part of the neck, and sends prolongations into the chest. In children, it is tuberculous ganglia which exercise the compression; in other instances, a pleuritic effusion may compress the vena cava, at least we are justified in supposing so, although there are no well established examples of this kind on record. An induration of the superior lobe of the lung, an intra-thoracic tumor, a lesion of which M. Gintrac has reported some examples, may produce this accident. Finally, and this is the most common lesion, an aortic aneurism may produce this compression. It is certain that in the present case there is neither pleuritic effusion nor goitre. Nor is there anything to lead us to suppose that there are tuberculous ganglia. If the subject were a child, we would be almost forced to attribute it to this cause; but in the adult, although Marchal (de Calvi) has demonstrated the possibility of its occurrence, still it is so rare a lesion, and the evidences so entirely opposed to its existence in the present instance, that we dismiss it, confident that it does not obtain here. Pulmonary induration, consequent upon pneumonia, is not less rare; and moreover, it always produces grave constitutional symptoms, which have been entirely wanting in our patient. Relative to cancerous tumors of the mediastinum, they are invariably connected with a general diathesis, and affect the system in a way of which we have no traces here. The hemoptysis of which the patient spoke, may very well depend upon some disease of the arteries.

There remains as a last supposition aneurism of the aorta; which is, in fact, in at least three cases out of four, the cause of venous compressions. But here there is complete absence of all the signs which indicate it. There is neither *bruit de souffle* nor *de râpe*, nor arching of the chest, at least so far as the œdema will admit of our judging. On the other hand, there are strong grounds to believe rationally in the existence of an aneurism of the aorta, in view of its frequency, and of the oppression, which is of four years' standing, and finally, in view of the absence of all other possible disease.

The variability of the results of the compression can only be explained by aneurism of the aorta, an affection in which the very intense phenomena may diminish and almost disappear from one day to another, according as the tumor, under the influence of various causes, is diminished or augmented. The considerable volume of the tumor explains sufficiently well the absence of the souffle and of a strong impulsion.

Relative to the prognosis, M. Grisolle predicted an early death, because of the gravity of the symptoms. How is the circulation of the patient performed? Probably, remarked the professor, the vein is still in part permeable; the only indication to fulfil is, to diminish the mass of the blood; and with this view two bleedings were made. There is here danger at any moment: there may be compression of the brain in consequence of rupture of a vein; rupture of the aneurismal tumor, if there exists one, which however is not demonstrated. But under any hypothesis whatever the case is beyond the resources of art.

Four days after this meeting the patient died. The following, which in some respect supports and in others is opposed to the opinion of M. Grisolle, was found at the autopsy.

Half a glassful of serum was found in the cranium; the cerebral pulp slightly injected, which, however, may be remarked in passing, does not satisfactorily account for the cerebral phenomena which preceded death.

On opening the chest, a tumor, composed of a fatty substance, was found behind the sternum, of an inch and a half in extent vertically and an inch in width, which explains both the dulness and the absence of the respiratory murmur. The tumor extended from the *manubrium sterni* to the base of the heart. This much was in support of the diagnosis of Grisolle.

The superior vena cava was swollen and distended by coagula; but, at a distance of three-fourths of an inch from the heart it contracted almost abruptly, and was transformed into a full, solid, fibrinous cord; there was complete obliteration of the vessel. M. Grisolle had believed that there was only obstruction, but there was more; the vein no longer existed. Farther, there was no aneurism of the aorta. The superior vena cava rested upon a patch of induration which encircled the main bronchia of the superior lobe of the right lung, which explains the sibilant rales heard upon auscultation. The superior lobe had the aspect that the lungs present when compressed for a long time by an effusion.

What was the cause of this alteration? By what mechanism was it effected? Probably, certainly even, there had been phlebitis, and, more certainly still, primitive phlebitis, if one considers the rarity of the propagation of inflammation of the cellular tissue to the veins, and the frequency of this propagation from the veins to the cellular tissue.

Grisolle is the more excusable for having made this error in diagnosis, from the fact that this is the only example on record, in our knowledge, at least, of obliteration of the superior vena cava by spontaneous phlebitis. Hodgson, in his work on the diseases of the arteries and veins, has the following sentence: "I am not aware that the *superior vena cava has ever been found completely obliterated.*" In the translation of this most admirable of books into French, by Breschet, the following note occurs, though it will be remarked that the analogy between the case which he cites and the present is not perfect, since in the former, the obliteration

of the cavity of the vein came from within, and depended upon polypiform concretions, whilst in the latter, the vessel was completely transformed, being a perfect fibrous cord: "In the museum of the Faculty of Paris, there is a piece modelled in wax by Pinson, under the direction of Dupuytren, which represents a polypiform concretion formed in the superior vena cava, and is prolonged into the subclavian and the jugulars, obliterating the canal of these vessels, to the walls of which it adheres; this concretion is white, which leads us to believe that it was formed of fibrine."

A few Considerations on Osteitis and some of its forms.—It is only within the last fifteen years that osteitis has been at all understood, the reason being that, before this time, the intimate structure of bone was not even suspected, notwithstanding it had been made the object of repeated and well conducted research.

Although as far back as the seventeenth century Leuwenhoeck expressed opinions concerning the nature and structure of the compact tissue, not far different from those entertained at the present day, they were abandoned and almost totally forgotten, when Deutsch verified anew their exactitude, in 1834. M. Gerdy arrived at the same results at almost the same time, and Miescher confirmed the investigations both of Gerdy and Deutsch the year following. A correct and intimate acquaintance with the structure of the bones conducted to that of their diseases. The proof of this fact is found in the publication of M. Gerdy, upon the material state of diseased bones (1836), which followed the year after the appearance of the first work.

In the possession of M. Demarquay, prosector of the Faculty, there are two exceedingly curious pieces of pathological anatomy, of which I shall endeavor to give an idea, at the same time that it affords me an opportunity of alluding more at length to the works above cited.

The first piece is the left femur of a woman who presented a number of fistulous abscesses in the thigh, but concern-

ing whose history nothing could be learned. An attentive examination reveals the following: The periosteum is inflamed and thickened throughout almost the whole length of the bone; raising it up a layer of calcareous substance, from one to two millimetres in thickness, an osseous tissue of new formation, reddish and still spongy, is perceived occupying nearly half the surface of the bone. This layer constitutes what has been designated under the name of osseous stalactites, that are found deposited in certain forms of osteitis by the periosteum, whose mode of action and vitality has been modified. In the half of the bone which at its surface is not the seat of these deposits, great vascularity is perceived, vascularity analogous to that observed in a muscle or in skin.

The bone being divided longitudinally by means of a saw, presented the following: In certain points the medullary canal is enormously dilated; abscesses, many of which have opened externally, are found in the osseous tissue itself; three perforations of the bone by which the pus was evacuated are observed. These osseous abscesses are situated at the union of the inferior third with the superior two-thirds. The whole of the middle third of the bone presents a lesion diametrically the opposite of this. The medullary canal has completely disappeared, obliterated by the deposit of a compact substance, continuous, without any interruption, with the normal compact tissue of the bone; thus, whilst the superior and inferior third of the bone are the seat of *rarifying* osteitis, the middle third offers a manifest example of *condensing* osteitis. In the whole of the superior part of the osseous canal, the medullary membrane is red, injected, vascular; in the inferior part, on the contrary, the vascularity is partial, and pseudo-membrane and purulent deposits are found; these deposits being prolonged to the articular cartilage, which is very thin, scarcely indeed existing at all. The compact portion of the condyles is so vascularised and thinned that it may be said hardly any longer to exist, while it yields readily under the pressure of the finger.

Gerdy, in his researches on the normal structure of the bones, says they are formed of 1st, A compact tissue, an assemblage of osseous tubes developed around vessels, as the body of the long bones is primitively but an osseous canal developed around the medullary artery, of a minuteness which renders them inappreciable to the microscope, they acquire in osteitis, a dilatation which reveals both their existence and arrangement.

2d. Of a *canalicular* tissue, an agglomeration of little canals, with walls pierced by holes, nearly parallel, and most abundant towards the extremity of the bone; this is the spongy tissue.

3d. The *cellular* or *areolar* tissue, the description of which would be very difficult in this place, and which is found in the epiphyses, the flat and the short bones.

4th. The *reticular* tissue, solid osseous fillets, which occupy the medullary cavity of the long bones, and that of the short bones provided with a medullary cavity.

The vessels of the bones extend into the canaliculae, and there anastomose through the medium of the holes in the walls of these hollow tubes in the centre of the medulla, which is essentially the same in the canaliculae as in the canals properly so called.

Our limits do not allow us to continue these extracts, but we would refer the reader to the Memoir of M. Gerdy, inserted in the *Bulletin Clinique*, of which we have made mention. Let us now trace the parallelism of the case in hand with the pathological description of M. Gerdy.

Osteitis, says he, is rarely simple, or at least is so for only a short time. Traces of inflammation of the periosteum and of the medulla are almost constantly found in inflamed bones, and often an inflammation of the cellular tissue which unites the cartilages with the articular extremities of the bones. Osteitis shows itself in the four tissues of the bones, either primitively or consecutively; that is to say, observation proves that a bone becoming inflamed in any point of its different tissues, the inflammation extends to the other tissues

of the bone. Osteitis assumes three different forms, which may exist at the same time in the same bone, and of which we find examples in the piece that we have described.

1st. *Rarifying* osteitis, which consists in such a dilatation of the furrows, the canalicular, and the vascular openings, that they allow the introduction of a large sized pin, and even in some cases a pigeon's quill.

The absorption of the osseous substance is such that when a bone is generally inflamed its principal canal of nutrition is sometimes increased to double the normal size. The medullary canal becomes dilated and approaches both the surface and the extremities of the bones. The canalicular or spongy, and the areolar tissue do not offer less profound and marked alterations.

2d. *Condensing* osteitis, in which the compact tissue is thickened and rendered more dense; the canalicular and reticular tissue are also occasionally altered in the same manner. The bone on being cut presents the aspect of sawed stone. It also often happens that the alteration of these tissues completely obliterates the medullary canal of the long bones, as is the case in the present instance.

The vascular rarification of the bones is evidently produced by the resorption that the vessels exercise at the circumference. This cannot be doubted, for there is no trace of any osseous detritus around the vessels, as would occur if the dilatations were owing to mechanical wear; on the contrary, the compactness of condensing osteitis is a product of interior secretion.

3d. *Ulcerating* osteitis, which consists in an ulceration which is always accompanied by more or less abundant suppuration.

Where osteitis becomes complicated with periosteitis, the periosteum is thickened, adherent to the bone, injected, etc. But what is more curious, are the deposits of osseous matter under the periosteum on the surface of the bone itself, in the form of distinct but very small drops, mamillated eminences,

or laminæ of greater or less size—as is seen in the femur of which we are speaking. This, now, is a proof, furnished by pathology, of the physiological law of the formation of bone by the periosteum. The inflammatory action augments the normal osseous secretion. In cases where ostistis is complicated with inflammation of the medullary tissue, the medulla is more or less red and inflamed. If there is *sub-diarthritis*, the cartilages seem to become thin, yield under the finger, and sometimes disappear entirely.

We have endeavored in making these translations only to go so far as to exhibit the correctness of the descriptions, and the possibility of the simultaneous existence in the same bone of these different forms of inflammation.

I hasten on, for fear of wearying your readers, to a very brief description of the second specimen of which I spoke, which, in my eyes, is not less interesting than the first, to which it has many points of resemblance. This is an anchylosis of all the bones of the carpus, with those of the forearm on the one hand, and with those of the metacarpus on the other. The inferior extremity of the radius is continuous with all the bones of the carpus and metacarpus without the least interruption, without its being possible in any way to determine the point where one begins and the other ends. The only two bones which are untouched by the anchylosis, are those in which the synovial capsule is independent, the metacarpal of the thumb and the pisiform. The articulation of the cubitus is equally independent. We find here a demonstration of the fact advanced by M. Gerdy, of the absorption of cartilages under the influence of osteitis; these cartilages once absorbed, the osseous surfaces are in contact, and osteitis, assuming the condensing form, determines the soldering of the bones.

These two specimens complete one another. In the first, we see the beginning of the work of condensation. In the second this labor is finished, and we find but its result.

Encephaloid Cancer of the Testicle. — Castration. — New Method.—Recovery. For sometime past I have intended to speak of a new method of castration proposed by Jobert, of St. Louis hospital, but have unavoidably deferred it till now.

Although ablation of the testicle is in itself not an excessively grave operation, it nevertheless demands such precautions that modern surgeons are still divided concerning the best method of operation, and this difference of opinion obtains in each of the two steps of the operation. Thus, in the first, one party, and by far the larger, practice one or two semi-eliptical incisions upon the anterior part of the tumor which they afterwards dissect in its entire circumference; the other, adopting the method of M. Aumont, leave intact the anterior part of the tumor, while they attack it by an incision made upon its posterior part. This last method, according to its supporters and M. Aumont himself, is more prompt and consequently less painful, and by the very position of the wound, allows the pus to escape with much more facility; whilst after the ablation of the testicle by the first method, which is the ordinary one, there remains a quantity of skin sufficient to form a species of pocket or pouch where the pus stagnates and prevents prompt cicatrization.

M. Roux thinks the advantages claimed by Aumont are more apparent than real. After having frequently performed the operation according to this method, he declares that he has seen it followed by inflammatory accidents, such as have induced him to abandon it altogether. This does not appear astonishing, if it is remembered that the wound thus placed at the posterior part can be dressed only by lifting up the scrotum, which always produces pain, and even suffices, in some cases, to produce the inflammatory accidents observed by M. Roux.

Furthermore, in the method of Aumont as well as in the ordinary one, there is the disadvantage of having too much skin, which prevents the union by first intention, so import-

ant when it is wished to obtain a prompt cure. It is with the view of obviating all these inconveniences that Jobert has proposed the method that we will presently describe, and which, as will be seen, perfectly fulfils all the indications.

Surgeons are not more harmonious concerning the second step of the operation. Here the question is to know if the ligation of the cord should be practiced *en masse*, or if it is not preferable to tie each artery separately.

The partisans of the first method urge in favor of their opinion the difficulty that would be experienced in seizing each artery after the section of the cord, which, owing to its retraction, has to be held by an assistant. Such is the opinion of Roux and Malgaigne.

Without denying the fact, it may be simply remarked that Jobert has already performed the operation quite a number of times, and in no instance has the retraction spoken of been observed; and further, the cord, when divided almost on a level with the internal orifice of the inguinal canal, remained prominent in the bottom of the wound, and nothing was easier than to sieze hold of each artery, and throw a ligature around it. Moreover, admitting even the possibility of the retreat of the cord, there is a very simple way of avoiding the inconveniences which would ensue, and this without throwing the ligature around the cord *en masse*. This consists in tying each artery as it is exposed by the bistoury—a measure proposed by M. Bichat, and always practiced by Jobert.

In this way the ligation of all the arteries which enter into the composition of the cord is performed before the section of the deferential canal; so that after the division of the latter, the cord may retract without creating any fear of hemorrhage. It is true that this procedure is longer than that which consists in ligating the cord *en masse*, and this is an important consideration, since in one instance Begin, after having tied the cord, saw the patient die of tetanus, which he attributed with reason to the sufferings experienced by the

patient during the operation. Another not less important consideration is drawn from the time at which the ligatures come away. In Jobert's operation the ligatures commence dropping off from the eighth day, and thus there is nothing to retard the cicatrization of the wound, whilst in the other methods the ligature is not cleared till at a much later period. Jobert has seen it remain for sixty days, and there can be no doubt that it served by its presence to prevent the cicatrization of the wound; and in some cases acting as a foreign body, it determines much suffering and even very grave inflammatory accidents.

Without adding anything more, without speaking of the method of certain other surgeons, (Pouteau among the number) who have proposed to tie the cord previous even to attacking the tumor, which in some cases has become gangrenous and escaped by an opening in the scrotum the result of sloughing, we will conclude by reporting a case which occurred in Jobert's wards during last winter:

M. Moret, aged 39 years, a worker in copper, entered the hospital on the 10th of January, 1848. Of a good constitution, the patient has always enjoyed good health. He says that he has never had any syphilitic disease, nor any injury of the scrotum.

Fifteen days before the appearance of the disease for which he was received into the hospital, he remarked the development of two small tumors in the right pectoral region; these, however, he rid himself of by the application of a pommade, with the composition of which he was unacquainted. About a fortnight after their disappearance he perceived that the right testicle was more voluminous than that of the left side, though it gave him not the slightest inconvenience and did not interrupt his work. The testicle continued increasing in size, so rapidly indeed that at the end of five months the patient, without having ever experienced any pain, determined to enter the hospital, at which time his condition was as follows:

His general condition is satisfactory, and he presents no symptoms of diathesis. The right testicle is the seat of a tumor about the size of the closed hand; it is regular, not transparent, and offers neither fluctuation nor resistance. But little sensible to pressure, the skin which covers it is mobile and traversed by dilated veins. After having interrogated the patient and carefully examined the tumor, M. Jobert diagnosed an encephaloid tumor of the testicle. With a view, however, of being more sure, he made an exploring puncture, which only confirmed him in his opinion. The canal of the trochar gave issue to only a few drops of blood, which continued to flow from the puncture after the instrument had been withdrawn. And this, let me remark, is considered by Jobert as a characteristic sign of encephaloid cancer. He no longer hesitated to propose the removal of the tumor, which being agreed to by the patient, was performed on the 18th of January, in the following manner:

An assistant kept the testicle of the opposite side well drawn back; Jobert now placed himself on the right side of the patient, and made upon the right side of the tumor an incision which, after arriving at the most dependent portion was continued upon the left side, though not so high up as that on the right side, in order to avoid injuring the left vaginal tunic. This incision, which has the very form of the tumor, divides all the scrotal tunics down to the testicle; so that two flaps result, one of which is applied upon the anterior face of the tumor, whilst the other covers the posterior.

The second step of the operation consisted in raising each of the flaps, by destroying the cellular attachments which connected them with the tumor. This step of the operation, as will be readily understood, is exceedingly short, and we arrive almost immediately upon the pedicle of the tumor, that is to say, upon the spermatic cord. Instead of cutting this by a single stroke, we have said above, that Jobert, by means of gentle touches of the bistoury, divided the arteries

one by one, and immediately tied them. When he reached the deferential canal he divided it with a single cut of the bistoury, without any trace of blood issuing from the cord, which projected in the middle of the wound.

The two flaps were then cleansed, and a few small arteries which poured out blood upon their surface were ligatured; finally, the two flaps were applied one upon the other, like the two valves of an oyster shell, and were very easily maintained in contact by means of a number of twisted sutures. Simple dressing was made, and the patient, who had been chloroformised, was taken to his bed unconscious of having submitted to the operation.

The dissection of the tumor entirely confirmed the diagnosis. It was obvious that it was composed of encephaloid matter in different stages of softening. In its middle thick walled cysts, resembling cartilage, were observed the origin of which Jobert attributed to an abnormal dilatation of the seminal canals.

Save a slight œdema which appeared in the first twenty-four hours after the operation, and as soon disappeared, nothing occurred calculated to retard the recovery of the patient, who, at the end of twelve days, was reported cured.

The method of castration as proposed by Jobert seems to fulfil all the desired indications more completely than any of the others.

In the first place, the dissection of the tumor is as simple, as prompt, and executed with as much facility as in Aumont's method.

2dly. The wound is more easily dressed, and the cicatrix, though placed on the sides of the scrotum, is not more visible than in Aumont's method.

3dly. The posterior flap forms an inclined plane upon which the pus glides with facility, whilst the wound, by its dependent position, affords it easy escape.

4thly. The flaps are brought together and united by first intention with great facility.

Finally. The ligation of the arteries, as practiced by Jo-

bert, while it offers the advantage of preventing all hemorrhage, saves the patient the cruel suffering which results from tying the cord *en masse.*

Dry Gangrene of the Extremities produced by a Septic Cause. The causes of dry gangrene of the extremities are extremely obscure. Jobert has recently called the attention of the profession to one—puncture of the skin by an instrument charged with septic matter—which hitherto appears not to have been sufficiently insisted upon, and the variety of gangrene which it produces not at all, or at least not satisfactorily described, by authors. During the past winter Jobert has, on several occasions, pointed out to me examples of this variety, and it is with the view of presenting an outline of them, with the treatment which he adopted, that I have introduced the subject.

A female sick-nurse, 50 years of age, entered the hospital in November, 1847, laboring under dry gangrene of the thumb of the right hand. Before her admission into the hospital she had been waiting on a lady who had, a short time previous, submitted to the removal of a breast; when one day while sewing the linen together which had been used in dressing the wound, and which was impregnated with pus and septic matter, she pricked the pulp of the right thumb with her needle. At first she paid but little attention to it; but the same evening her fingers and hand became swollen; nevertheless she continued her work without any inconvenience resulting till two days after, when in the night she was seized with a violent chill, accompanied by cephalalgia, vomiting, and diarrhea. Forty-eight hours afterwards she entered the hospital, at which time the thumb was black, dry, and horny.

During the first eight days the general symptoms persisted, though somewhat less intense. At the end of this time her appetite returned, the gangrene became limited, and Jobert disarticulated the member at the first phalanx, soon after which the patient quit the hospital cured.

Two analogous cases, which were treated with the same success, were admitted into the hospital, the one in October last, and the other in February.

We have had here, said Jobert, gangrene presenting the characters of senile gangrene, but of a peculiar nature, and of which we are obliged to regard septicity as the exciting cause. There was true impoisonment of the punctured part, produced by the inoculation of a virus which acts in the same manner as that which produces malignant pustule.

It is nevertheless necessary that we establish between the virus of malignant pustule and the virus which has caused this, an important distinction. The action of the virus of malignant pustule is in some degree indefinite. That of which we speak seems to be less energetic and intense. The gangrene that it determines always becomes limited after a certain time; the force of the virus growing gradually more feeble. It may happen that the virus after having exhausted its disorganizing force still preserves sufficient energy to produce a diffuse phlegmonous inflammation.

According to Jobert, the accidents which succeed the prick of a lancet or scalpel, or which appear to be developed spontaneously, are the result of one and the same cause, the mode of action of which is the same, the only difference that it presents being in its intensity. It produces a local gangrene which soon becomes limited for want of virulent matter, or only a diffuse phlegmonous inflammation; or it may continue progressing and destroy indiscriminately all the tissues, presenting the greatest analogy with malignant pustule.

The treatment of this new variety of gangrene, or to speak more correctly, of this not before described variety of gangrene, is general or local. The first, which is but secondary and accessory, consists in emollients, derivatives to the digestive tube, and even, if they are indicated, opiates internally. However grave the general symptoms may be, sanguine emissions are not admissible, for they would but facilitate the absorption of the virus and give rise to still more grave accidents. The surgeon should make every effort to

localize the action of the septic matter and, as far as possible, destroy it.

This latter result is only obtained by means of local treatment similar to that adopted in malignant pustule, namely, cauterization with the red iron. Jobert thinks that no other caustic agent compasses the desired end so entirely as this; for a profound, and, in some measure, instantaneous action which attacks and immediately destroys all the remaining virus, is what is required. If the virus has already produced gangrene of a certain amount of tissue, if the gangrene is of small extent, you must not hesitate to cauterize.

Finally, if the gangrene has invaded an entire organ, a finger or a phalanx, for example, amputation is indispensable. But in such an extremity, bear in mind that the smallest portion of the fingers or hand may be of the greatest service, which should induce you to respect the portion of the organ which is not the seat of the gangrene however small it may be.

A new method of removing Lipoma.—Instead of circumscribing the tumor by two semi-eliptical incisions, and proceeding from without inwards, which always necessitates long and painful dissection, Jobert grasps the tumor firmly in one hand, squeezes it in order to diminish as much as possible its transversal diameter, then, with a long and narrow bistoury he transfixes the tumor transversely on a level with the skin, in such a way that it is divided throughout its entire extent. This incision is hardly accomplished before the two borders of the wound separate spontaneously, when the two halves of the lipoma may be seized with great facility and rapidly enucliated. Union is to be affected by suture.

Acetate of Lead in Diarrhea.—A patient in the wards of M. Béhier labored, for three months, under an abundant diarrhea which it was impossible to refer to any appreciable lesion. He presented no sign of pulmonary phthisis, nor of chronic disease of other viscera. Béhier ordered a blister

to be applied to the ileo-cœcal region, and though the effects of it were by no means remarkable, a very curious phenomenon supervened in connexion with it. The patient after he had dressed the blister, having carried his hands to his lips and eyes, herpes labialis and ophthalmia resulted, during the entire existence of which the general condition was greatly ameliorated; the diarrhea disappeared almost completely, but it returned as soon as the two concomitant affections were cured. For some days M. Béhier prescribed the liquid subacetate of lead in injections, instead of the extract of bark and laudanum that he had previously employed. Béhier thinks this mode of administration of the salts of lead exposes less to saturnine accidents than any other.

This application of the subacetate of lead is not new—concerning it M. Barbier says: "In the majority of cases rebellious diarrhea is producedby an irritation confined to certain points of the internal surface of the intestines, at which spot the sensibility is exalted, and there is increase of heat, tumefaction, and redness; often even, the evacuations are caused by minute superficial ulcerations along the course of the alimentary tube. In this diarrhea we have obtained very great success by the internal use of the acetate of lead. It seems to act upon the mucous membrane of the intestines, as it acts on the skin, by diminishing the irritation, the pain, and the heat in those places which are slightly ulcerated, by determining the cicatrization of these local lesions."—*Dict. des Sc. Médicales*, v. xiii., p. 569.

Gardner, in an English Journal of 1830, regards this action of the salts of lead internally in serous and mucous fluxes as better established than any other that is attributed to this substance. And never, or at least exceedingly rarely, has he seen it produce saturnine colic in cases of this kind.

The value of Tears in the Prognosis of the Diseases of Children.—Trousseau affirms that, when a child cries its disease is not grave; that when it does not cry, its disease is very grave. This he thinks may be regarded as an aphorism. If

the child cries, it will recover; if it does not cry it is very seriously ill. Although there are exceptions to this rule, still they are so rare that the physician should hold it in very sacred esteem.

If you are called to a child who, up to that time had cried, and who does not cry when you vex it, if its eyes become suddenly dry and sunken in the orbits, look out for a very grave disease of some kind; you will rarely be deceived unless, as sometimes happens, the child never cries naturally, and there are those of this kind. On the other hand, when you have detected souffle and dulness in a chest, when you have discovered hypertrophy of the liver or spleen, tympanitis; if you see the child shed a few tears, let your prognosis be favorable, it is the sign of early convalescence in almost every instance.

This sign is of value until the seventh year, when it ceases to be important. In the two first years, and especially in the first, it is almost invariably true. After the first year it is less to be relied on and gradually diminishes in worth every year till the seventh when, as I have said, it becomes valueless.

In serious operations on children, not for external diseases, but for affections, which although local, give rise to very grave symptoms, as croup, for instance, I have never seen a child cry under the bistoury. The little beings suffer but without weeping; and when some days after I see them shedding tears, I rejoice; and when they do not weep, I predict an unfortunate termination, which is nearly always realized.

Comparison between the Surgical and Medical Treatment of Cancer of the Breast.—There are certain cases, remarked M. Velpeau, in one of his late clinical lectures, when you may ask yourself if you should attack the disease by medical means, others where the indications lead you to resort to surgical therapeutics.

Certain practitioners employ in cancers of the breast, topics, resolutives, sanguine emissions, baths, and a certain regimen. These, in my opinion, are often dangerous remedies, and in all cases incapable of bettering the condition of the patient.

It but too often happens that, while they amuse themselves in following a useless course, time passes and the disease progresses. Often the operation was useful and would have cured in the beginning; now, owing to this temporising, the operation has become useless; for at a certain period it becomes as powerless to cure as medicine.

You must not then, attempt indirect medication, at least till you are convinced of the uselessness of an operation. Adopting this view, you will not think of medicine as a curative, but only employ it as a palliative agent. This fear of the inefficiency of surgical treatment is in no wise censurable, for the consequences too often support it; but let us see how far it is sustained.

Let us examine the question of surgical treatment in two lights.

As to the danger of the operation we cannot with reason say that it is very great; very few women die from it. It is true that the employment of the bistoury may be followed by erysipelas; but the same is no less true of a leech bite.

But is the surgical treatment adequate to the cure of the disease?

We must here make a distinction. If, for one tumor visible externally, there are myriads in the body in a microscopic state, if I may so express myself; if, in other words, there is cancerous infection; if the disease is general, a local treatment will be inefficient.

There are those who think that cancer is always a constitutional affection; with such, it is evdent that surgical treatment is impotent. If I belonged to this school, I would ever hold my bistoury shut to every such operation. But I do not. I think that if cancer, at first general, becomes sometimes local, if it pogresses, so to speak, from the inte-

rior to the exterior, there are numbers of instances where a cancer, at first purely local, may in the end yield to the circulation of its molecules, invade the economy, marching thus from the exterior inwardly.

This view of the matter leads to a special plan of treatment in each case.

If the disease is local, extirpation complete and without the least delay, is indicated. If the infection is general, spare the patient suffering which is always unnecessary and useless, and sometimes dangerous.

Paris, May 1848.

ART. II.—*Case of Obstruction in the Intestines.* Reported for the Medical Society of Tennessee, at its annual meeting in May, 1847. By JNO. W. RICHARDSON, M.D., of Rutherford county, Tenn.

On Wednesday, the 7th October, 1846, I was called to see a negro boy, aged 18 years, belonging to Mr. William James. Mr. James informed me that the boy had been unwell, to his knowledge, from the Monday night previous, when he vomited occasionally, and complained of pain in his belly.

On Tuesday he was still sick, and in very much the same condition. At night he took some castor oil, but soon threw it up. On Wednesday morning, Mr. James gave him some more oil, which he also rejected. At noon on the same day, he gave him a dose of calomel, and at 4 o'clock, P.M., I saw the boy. His appearance was quite natural, and nothing unusual was observed about him, except during a paroxysm of pain, which returned at short intervals. His skin was warm, tongue clean, and pulse very little, if any, accelerated.

On questioning the boy, he stated, that on Sunday last he ate a parcel of hard sweet apples, was sick and had pains in

his belly on Sunday night—that he had the "stinking belch" on Monday, which was followed by vomiting, severe pains in his belly, and costiveness, and that he had had no passage from his bowels since Sunday, and but a very small one then.

As he had not vomited since he took the calomel at noon, now four hours, and says he feels easier, I left him without giving any medicine, directing his master, if the calomel did not operate by 9 o'clock, P.M., to give some more oil.

Thursday, 8 o'clock, A.M. The calomel failed to operate; at 9 o'clock the evening before the oil was given and thrown up. The dose was repeated this morning, and it was thrown up also.

The boy suffered considerably through the night, vomited frequently; had no motion from the bowels, and is complaining very much. At this moment, whilst thinking about what to do for the boy, I was sent for in great haste to see a woman, ten miles distant, who had a retained placenta. I made however, six pills of the crumb of corn bread and croton oil, one drop of the oil to each pill; gave one myself, and directed Mr. James to continue them, one every two hours, until I returned, unless his bowels were moved.

I returned a little after 4 o'clock, P.M. The boy had taken five of the pills; had no passage. His sufferings seemed now to be almost intolerable. He complained of the most excruciating pain to the right of the umbilicus; his abdomen was swollen, tight, and unusually hard about the point where he felt most pain. His countenance was anxious, and indicative of much suffering. Pulse rapid, small, and hard.

While a barrel of water was warming, I bled him, in the erect posture, until he became very faint and perspired profusely. Having seen some account of the wonderful effects of hog's lard in such cases, reported in the Southern Medical and Surgical Journal, I determined to try it. A pint was melted, and the boy ordered to drink it—he vomited worse than ever. I tried it again, but the vomiting was increased so greatly by it, that it was discontinued.

As soon as the water could be heated, the boy was put in it, and kept there until the faintness became so great that it was considered best to remove him. He was laid on the bed and a tobacco enema prepared immediately. It is proper to remark that the common purgative enemata had been tried perseveringly for two days.

I do not know the precise quantity of tobacco which was used. I pulled a handful off of a large manufactured twist, threw it into a wash pan, and poured on it about a quart of boiling water. As soon as the water cooled sufficiently the tobacco was stirred around in it several times, and a pint of it was thrown up the rectum. The infusion looked very strong. In a few seconds the boy complained of giddiness, and asked to get up. He was placed over the vessel when the enema was discharged, but nothing else. He vomited now severely; afterwards, said he felt easy, and was laid back on his bed.

About 8 o'clock, P.M., I gave him another tobacco enema, which acted about like the former one; I then left him for the night to see my own family, some of whom were sick and needed attention. I directed Mr. James to repeat the tobacco enemata occasionally through the night, always observing to make the boy discharge them as soon as he became giddy and sick.

Friday morning, 9 o'clock. There has been no operation from the bowels yet; skin cold and wet; pulse small, feeble, and very rapid; occasional vomitings; less pain in the abdomen.

I asked permission to operate by gastrotomy, telling Mr. James that it was the only remedy which promised relief to his boy. Mr. James and the boy were both opposed to the operation, and as the case seemed now rather unfavorable for the success of an operation, I did not insist very strenuously.

Gave the boy a large portion of sulph. morphia, and left another for him at 1 o'clock, P.M., unless he rested easy.

The portion which I gave him afforded much relief for a short time only, and at the time prescribed he took the second portion.

4 o'clock, P.M. Called to see the patient; not much pain; other things about as they were in the morning. Directed the morphia as often as necessary to relieve pain and keep the patient quiet. Gave tobacco enema again, and repeated once or twice through the night.

Saturday morning, 9 o'clock. Boy much better, though he has had no operation from the bowels. He has quit sweating. Skin warm; pulse slower and fuller: abdomen neither so hard, nor so much swollen as on yesterday; slept some, for the first time; has some pain occasionally. Continue the the morphia as directed before, and give another enema at night.

Sunday morning, 9 o'clock. The boy slept more last night, says that he feels quite comfortable; skin nearly as warm as it ought to be; pulse about 80; complains but little from pressure on his belly, which feels softer, and much more natural. Enemata of oil and turpentine were given to-day.

4 o'clock, P. M. Called by Mr. James's. The boy has just had some passages, and as my visit this evening was not expected, the vessel was emptied. Mr. James informed me that there was nothing unusual except some long shreds of mucus.

From this time the boy took no more medicine; his alvine evacuations increased, and in a few days he was as well as usual.

Remarks.—This was a case of very obstinate constipation, and although there was no stercoraceous vomiting, yet it seemed to require the operation of gastrotomy, perhaps in an equal degree with the majority of the cases in which the operation has been performed. I do not make this remark, nor any other, to *oppose* gastrotomy, (for I doubt very much if the operation has been performed half as often as it ought

to have been), but only for the purpose of more particularly directing attention to the *medical* treatment.

Is it not probable that some such cases as the one recited have been made fatal by the habitual custom of giving powerful cathartic medicines? Is it not also very probable that if I had continued to give this boy purgative medicine, he would have died? And is it not pretty certain that the change for the worse so rapidly on Thursday was produced by the croton oil? These are important questions, and much depends upon correct answers.

As to the proper medical treatment for such cases, everything depends upon knowing what causes the obstruction. Is it produced by spasmodic action of the bowels, by intussusception, or by the peculiar and unnatural condition of the contents of the bowels? These are the questions to be determined.

Having ascertained what causes the obstruction, the proper remedies will readily suggest themselves to the intelligent physician. The diagnosis, however, is very difficult, I will not say unattainable, but until more light is thrown upon the subject, it must often be uncertain, and sometimes incorrect. Bleeding, the warm bath, and morphia, would have cured this boy in the beginning. This is my opinion.

July, 1848.

ART. III.—*A Case of Temporary Blindness, preceded by Constipation and Suppression of the Menses:* in the practice of Professor Gross. Reported by N. BOZEMAN, M.D., of Louisville, Ky.

Sarah M., the subject of this case, is 42 years of age, stout and robust, and has never been married. Her health has always been excellent, with the exception of occasional attacks of rheumatism. On the 16th of June, at 2 o'clock in the af-

ternoon, while working in the kitchen, she was suddenly and almost completely deprived of sight, without any unpleasant feelings or premonitory symptoms. About seven hours after the attack came on, Professor Gross was requested to visit her, but being unable to do so he desired me to see the patient, with the injunction to meet certain indications, if they should be present. On inquiry as to the mode of attack, she stated that she could give no account of it, beyond the fact that she was exposed at the time to a very intense heat, and that she did not exert her eyes more than usual. The vision was at first nearly intercepted, as if a dense cloud had passed between her and the sun. She could see objects indistinctly for a short time afterwards; but when I visited her at 9 o'clock she could distinguish nothing, not even a lighted candle held near the eyes.

Her health was apparently feeble in every respect. She experienced no unpleasant feeling any where. Her bowels, however, had been costive for two or three days, and her pulse, though regular, was strong, full, and eighty in the minute. Her menses had always been regular, until about six months ago, when they disappeared, owing, as she supposed, to "the change of life." Two months ago they returned; the flow was quite profuse, and lasted ten or twelve days, rendering her very weak. To check it, she resorted to the cold bath, which had the desired effect. At the next period, the discharge was again remarkably copious, and the same means were employed to arrest it as before. Menstruation occurred on the 9th of June and continued profusely until the 16th, when, about 4 o'clock in the afternoon, she employed the bath again for the purpose of suppressing it, as she had been considerably debilitated. The flow was soon stopped, and in less than twenty-four hours blindness supervened.

On examining the eye the pupils were found to be preternaturally dilated, and to be but little influenced, in their movements, by the light of a candle held close to the face.

To meet the indications presented by the case, the patient

was bled to syncope, and ordered to take a dose of calomel, in union with jalap, colocynth, and gamboge.

June 18th, 9, A.M. Professor Gross saw the patient this morning. The medicine produced some vomiting, and operated copiously in the latter part of the night. The pupils are less dilated, and contract more readily under the influence of the light, which she is able to distinguish. An emetic of ipecacuanha and antimony was ordered, to be followed by infusion of sena and salts in the evening.

7 o'clock, P. M. The emetic has acted well; the patient is improving, and is able to distinguish objects held near the eyes.

19th, 9, A. M. The bowels have been freely moved by the cathartic medicines. The pupils dilate and contract readily, and the sight is greatly improved.

7 o'clock, P. M. The patient is nearly well; the only thing she complains of is that objects appear to be moving before the eyes.

20th, 9 o'clock, A. M. The patient says she can see as well as ever, and that objects appear perfectly natural. She is able to be up and attend to business, though still weak.

The duration of the attack—that is, from the beginning of the blindness to the complete restoration of sight—was about sixty hours. On enquiry it was found that the menses had been re-established the previous night, the suppression having lasted not quite three days and a half.

Louisville, August 3, 1848.

ART. IV.—*A Case of Concussion of the Brain.* By WM. D. BARNETT, M.D., of Pine Bluff, Arkansas.

On the 1st of August, 1847, while sitting in church, my attention was drawn to a man behind me who had apparently

fainted; his attending physician, who was near, called upon me for assistance. At the time I made no inquiry into the history of the case, but set to work endeavoring to relieve him of the present alarming condition.

The patient was nearly pulseless at the wrist, but the carotids were in violent action; his eyes presented a wild and furious appearance; the flexor muscles of the upper and lower extremities were thrown into powerful contraction, and occasionally he would utter a deep and agonizing groan, and grind his teeth powerfully together. A vein in the arm was opened, the blood ran out slowly at first, but gradually increased; with this increased flow of blood, (when about a pint had been taken), the pulse rose and gained considerable volume and strength. The vein was allowed to remain open until sixty-four ounces of blood had run out, when the pulse was reduced, and all the alarming symptoms disappeared. Cold water poured upon the head was used in conjunction with the bleeding.

After relief was obtained, he was conducted home, and I heard no more from him until about the 26th of the same month, when I called to see him.

On inquiry, it was stated that in May last, while in a fit of intoxication, he had fallen from his horse and received a severe shock, from which he did not recover for several minutes. From this time up to the 6th of July he suffered from intense pain in the head. Anterior to this time, he had no manifestations of any derangement of the brain. He inherits no predisposition to mental derangement. The pain increased up to the 8th of July, when he had a fit similar to the one in which we first found him. He had frequent attacks of this kind, but would partially recover from them and go about his business. During the whole time his countenance wore the expression of some aberration of mind, and any excitement or sudden emotion would throw him into the apoplectic condition alluded to.

His present condition, (16th of August) is very different

from the one we have described, and is truly a singular one. He is lying upon his back sleeping and talking continually of things that he has seen within the last three years, his thoughts not running upon anything or circumstance prior to this time. He is now relating, in the most pathetic manner, the story of his love and courtship with a young lady to whom he had formerly paid his addresses. It seems to bear heavily upon his mind, and, in all probability, had some influence in the development of his disease. He would often imagine himself in Tennessee, his native State, surrounded by his friends, to whom he would recount the scenes he had witnessed in Arkansas; and would frequently, in a ludicrous manner, express his fears concerning the physician who attended him in Arkansas, saying, "that the cows would some day certainly eat him up, on account of his resemblance to *grass*." When he was talking his arms were in constant motion.

For several moments he would cease talking, when the pulse would be strong and full, but would gradually get slower and weaker, until it could scarcely be felt at the wrist. At this moment he would suddenly spring up and commence mocking a pet squirrel which he once owned, and after imitating this animal for a while, he would commence dancing, going through every step, and giving orders as to the manner in which the dance should be conducted. He would frequently sing, and, in his imagination, play the violin; this was a sensitive point with him, upon which he was a monomaniac.

Upon one occasion, while he was singing, a musical-box was placed to his ear. The music threw him into ecstacy; he sprang from his bed, and in a loud voice cried out, "*play on!*" Such was the excitement produced, that I was fearful he would never recover from it. The instrument had to be taken out of the room, and the patient waked up. When aroused he was rational. He was not conscious of having talked any while sleeping, but was aware he had been dream-

ing about the subjects mentioned to him, and felt very much mortified when he was told that he had recited every thing he knew; he would remark that he "would not do so again," but even while conversing he would fall to sleep and commence talking as he had done before. He would remain quiet longer upon either side than upon his back.

There was extreme drowsiness. The carotid arteries were in violent action, and the face presented a full and florid appearance; his pulse (when aroused) was rather tense and frequent. The eyes had a fiery look; there was but little fever; the bowels were costive; appetite good.

He was bled to twenty ounces, and twenty grains of calomel given, followed in five hours by a dose of sulphate of magnesia. A stimulating foot bath was directed to be used every night and morning; a seton was placed in the back of the neck. The bowels to be kept open with calomel, rhubarb, and jalap. The patient to be bled whenever there is any pain in the head, or any other symptoms of a determination of blood to the brain; his diet to be light, and not to expose himself to the sun. Two days afterwards I visited the patient and found him much better. He talks less in his sleep, and is altogether more tranquil than before. There has also been a remarkable change in his disposition—he being no longer the jovial and frolicksome man he formerly was, but entertains serious thoughts concerning religion; and seeming perfectly conscious of his danger.

The antiphlogistic treatment was continued, and the seton directed to be frequently moved.

In the course of a month I again saw him, when he told me that he felt as well as he had ever done in his life. He had lost the maniacal expression of his eyes, and no longer talks in his sleep.

In October he rode twelve miles to see and bid me adieu, previous to his starting to Tennessee. At this time he presented no symptoms whatever of disease, and I am inclined to believe that with proper prudence he will not have a return of this singular and distressing affection.

From want of sufficient evidence I reject the idea of the disease being hereditary, but regard it as dependent upon an unnatural determination of blood to the brain, consequent upon the injury which he had received. In conclusion, the history of the case, the symptoms and the effect of the treatment, justify the conclusion that it was a case of concussion of the brain.

July 29th, 1848.

REVIEWS.

ART. V.—*Lectures on the Physical Phenomena of Living Beings.* By CARLO MATTEUCCI, Professor in the University of Pisa. With numerous Wood-cuts. Translated under the direction of Jonathan Pereira, M.D., F.R.S., Vice President of the Royal Medical and Chirurgical Society. Philadelphia: Lea & Blanchard. 1848. pp. 388. 12mo.

Some months ago we introdued this instructive volume to our readers and presented an analysis of several Lectures, meaning at the time to return to it soon again and complete our notice of its intetesting contents. Hitherto circumstances have not permitted us to carry out our design, and even now we find ourselves so restricted by time and the limits at our disposal that the most we propose to do is to give an abstract of a few of the remaining lectures.

Lecture XI. treats of the *physiological action of gravity, light, and caloric.* Hunter was the first to observe the effect of gravitation upon germinating seeds. He filled a barrel with earth, in the centre of which were some beans, and having caused it to be rotated for several days, horizontally, found that the roots pointed in a direction parallel to the axis of rotation. Knight performed similar experiments, and found that when the wheel which he used was vertical, the radicles of the young plants pointed towards the circumference and the stems towards the centre of the wheel; but when the wheel was horizontal, the roots and the stems pointed obliquely, the roots being always directed towards the circumference. These

experiments clearly show that the direction of stems and roots is under the influence of gravity, the explanation of which is found in the following facts, viz: that the new parts of the young plant are in a more or less liquid condition; that there are degrees of density in the different parts of the plant; and that the denser parts are directed, at least in the first stage of germination, towards the roots.

Action of Light on Animals. Edwards, in his classical work "On the Influence of Physical Agents upon Life," has proved that the ova of the frog are more rapidly developed in the sun than in darkness, and also that tadpoles are more quickly and completely changed into frogs under the same condition. Observation has established the fact that deformity in the young of the human race is more common where children are born and reared in dark situations. In one of the towns of France the municipal authorities, some years ago, found it necessary, on account of the numerous instances of deformity in children born in the old forts, to prohibit the people from inhabiting those dark and miserable receptacles. It is well known that light affects the colors of animals, which are brighter in proportion to the intensity of the sun's rays.

Action of Light on Vegetables. This subject is better understood than the action of this agent upon the higher order of beings. The decomposition of carbonic acid effected by the green parts of plants, the fixation of carbon and the exhalation of oxygen, take place only under the influence of solar light. In darkness the process is the opposite, oxygen being absorbed and carbonic acid exhaled. Vegetables are etiolated in the dark, and become colored and hardened in the light. We are in possession of a fact which is capable of explaining this singular action of the sun. Our author states that—

"It has been observed, in executing images with the Daguerreotype, that the green parts of vegetables, and in general, all green bodies, are not represented, being the contrary to what takes place with objects of other colors. Now, since

it is well established that, in the formation of images, by the well-known process of Daguerre, these are owing to the influence of the chemical rays of solar light, we are compelled to assume that the green parts are not produced because they entirely absorb the rays. A very natural conclusion to draw from this fact is, that the production of the green matter in vegetables, and the extraordinary property with which this substance is endowed, of decomposing carbonic acid under the influence of light, of appropriating to itself the carbon and of exhaling the oxygen, take place under the chemical action of the solar rays. Nevertheless, it follows from some of Draper's experiments, that the luminous rays, properly so called, those which act more especially on the retina, viz: the yellow rays, are those under whose influence principally the green matter of vegetables decomposes carbonic acid. With respect to the absorption of oxygen and the exhalation of carbonic acid in darkness, it is admitted, that these are effected independently of the condition of life."

Action of Caloric on Organized Beings. A suitable temperature, remarks our author, is essential to life. "The possibility of living, is indeed comprised within certain limits of temperature, beyond which there are no examples of the development and preservation either of animals or vegetables." These limits are narrow, not reaching to 180 degrees of Fahrenheit's thermometer—in other words, from the freezing to the boiling point of water. No seed can germinate at a temperature as low as 32° and no plant or animal can live long in air or water heated to 212°. Edwards found that frogs in water at 32° lived longer than in warmer water, which is also the case with fish when confined in a small quantity of that fluid, the duration of their life being longer in proportion as the temperature of the water is lower. The explanation in both cases, is that at this low temperature these animals consume but little oxygen, and consequently the supply in the water is not so soon exhausted. Our author, in some experiments on the torpedo, proved that this animal gave powerful shocks but soon died in water at 82°, and on the contrary lived a long time in cold water, giving a few and feeble shocks. The relation found between the respira-

tion and the temperture of the medium in which these animals live, Matteucci considers "a further proof of the chemical nature of this function."

The ability of man, and mammals in general, to support a temperature much higher than that which is proper to them, is illustrated by a number of facts. Tillet and Duhamel's observation of a young girl who remained twelve minutes in an oven heated to 262°, is recorded; as also that of Delaroche and Berger, who saw cats and rabbits die at the expiration of a few minutes in an oven heated to 132°. Dobson mentions a young man who remained for twenty minutes in an oven heated to 210°. Berger supported for seven minutes an atmosphere at 228°; and Blagden was enclosed in one heated to 260°. But, remarks our author, "it is different if the heated air be saturated with aqueous vapor." Berger could remain only twelve minutes in a vapor bath whose temperature was raised from 113° to 128°; and the temperature which a man can support in heated water is still less than that which he is capable of enduring in a vapor bath.

Does the temperature of the body, under exposure to such heat, undergo any variation? It does, although the contrary has sometimes been asserted. Delaroche and Berger found an increase of 9° in the temperature of one of them, who had remained for eight minutes in a chamber heated to 186°; and they also proved by repeated experiments, that the exposure of mammals and birds to a hot and dry air produced an elevation in their temperature, greater in proportion to the length of time they were kept in it until death took place, which was uniformly at an exaltation of the normal heat of from 12° to 14°. They conclude that the temperture of an animal cannot be raised more than 14° above the natural point without causing death. Upon these facts our author remarks—

"An elementary knowledge of physics suffices to explain the effects of the exterior temperature on the heat of animals.

The formation of aqueous vapor; which constantly escapes by the skin of an animal, is a permanent cause of refrigeration for it. This fact explains why in hot and dry air the temperature of the animal is not so high as when the air is loaded with vopor.

"There exists then, in the animal, a constant source of heat, and a constant cause of refrigeration; and an almost invariable temperature is maintained, notwithstanding the variations which take place in the exterior media, whether colder or hotter than itself, since the cause of cooling is more energetic in proportion as the temperature is higher, and *vice versa*."

Franklin had put this subject in a clear light long before the time of Matteucci, and the wonder is that philosophers have been able to find in the refrigerating process of animals anything mysterious. It is due to the evaporation of water from the surface, and to nothing else. In other words, it is a purely chemical process.

The *physiological action of Electricity* is examined in the thirteenth lecture. This action is most satisfactorily exhibited by means of galvanic apparatus. It was earlier than the period generally assigned that Galvani made his first discovery in this marvellous science. Our author says—

"In a memoir, found among the manuscripts of Galvani, and bearing this title, in his own handwriting, *Experiments on the Electricity of the Metals*, dated 20th September, 1786, a fact is mentioned which certainly has had as much influence on the advancement of science, as any of the discoveries of Galileo and Newton. It is, that contractions are excited in a frog, recently killed and prepared according to the usual method of Galvani, when we touch its muscles and nerves with an arc composed of two different metals."

Effects of the Current on the Sciatic Nerves. These are shown to advantage in the rabbit. The nerve is separated as much as possible from the surrounding parts, wiped with unsized paper, and then insulated completely from the neigh-

boring tissues by a band of gummed taffeta. The author proceeds—

"You perceive the effect produced when I transmit the current from a pile of ten elements along the nerve, by applying the two conductors at a little distance from each other, in such a manner that its direction is from the central part of the nervous system to the periphery of the nerve (that is, in the direction of the ramifications of the nerve.) At the moment when I close the circuit, all the muscles of the thigh contract, the animal utters loud cries, its back becomes forcibly bent, and its ears are agitated.

"These phenomena recur when I change the respective position of the electrodes; that is, when I cause the current to pass in the reverse way to that which it previously did, and direct it from the periphery to the nervous centres.

"The effects which you observed at the moment when I closed the circuit, are repeated when I open it, by interrupting the communication of the conductors with the nerve, both when the current is in the first direction (*direct* current,) and when it is in the second, or opposite direction (*inverse* current.)

"But during the time that the circuit is closed, whatever may be the direction in which the current is passing, the animal no longer presents any of these phenomena. We shall soon see what kind of action ought to be attributed to the latter during the time of its passage along the nerves.

"If the current be applied to the nerves in such a way that it passes across the nerve instead of along it, the contractions are more feeble; and even entirely cease when the experiment is conducted in such a manner that all the current passes normally in the nerve.

"In repeating these experiments upon different rabbits we have remarked that, in general, the signs of pain evinced by the animal are more violent at the commencement of the passage of the inverse current, and that the contractions are stronger and more obvious at the commencement of the direct current.

"Whatever be the direction of the current in the nerves, it gives rise, both at its commencement and at its interruption, to analogous phenomena; but we constantly observe, that the most violent contractions are those which are excited during the first moments of the passage of the direct current. Marianini observed, that if a man close the circuit of a pile com-

posed of a certain number of elements, by touching one pole with one hand, and the opposite pole with the other hand, the strongest shock is always felt in that arm in which the direct current circulates.

"If we continue to experiment upon the same animal, all these phenomena more or less rapidly cease, according to the greater or less energy of the current, and the animal gives no further evidence of the passage of it. If the animal then be left undisturbed for some time, or, if we augment the force of the battery, the previous phenomena reappear."

He continues—

"We must, therefore, divide into two different periods the action of the electric current on the nerves of a living animal. In the first, the irritation of the nerve is transmitted in all directions towards its central part, as well as to its periphery, both at the commencement and cessation of its action, and independently of the direction of the current. In the second period, the excitation of the nerve is transmitted towards its periphery, during the first moments of the action of the direct current, and at the instant of the interruption of the inverse current: on the contrary, when the direct current is interrupted, or when the circuit of the inverse one is being closed, the irritation of the nerve is transmitted towards the brain.

"I may express the whole of these results in more simple terms: the current acts in the direction in which it is transmitted, when it begins to circulate in the nerve, and in the opposite direction when it ceases to circulate."

The effects of the current on *poisoned* animals is carefully examined. The results are thus stated:

"The different methods of proceeding to ascertain the effects of various toxicological agents upon the excitability of the nerves to the passage of the electrical current may be reduced to two: one consists in ascertaining the number of elements necessary to excite contractions both in poisoned and in uninjured frogs; the other and preferable method, is to compare the time required for the passage of a given current to destroy entirely the nervous excitability of a poisoned animal and of another animal killed in the usual way.

"Animals which have perished in hydrogen, azote, carbonic

acid, and chlorine, and are submitted to the passage of the electric current through their nerves, present no difference from other dead animals which have not been subjected to the action of these gases. But this is not the case with those killed by hydrocyanic acid, or by the repeated discharges of a large battery through the spinal marrow. In these cases the current furnished by one, or even many elements, applied upon the nerves of an animal excites no contraction there, or if there be any they are very slight, and the passage of the current for a few seconds is sufficient to destroy them entirely. The muscles, however, when submitted to this same current, give very evident signs of contraction; thus proving what I have before mentioned that the muscular fibre must possess the property of contracting, under the influence of the current, independently of the nerve.

"Lastly, if the animals on which we act by the electric current have died in sulphuretted hydrogen, we never obtain contractions unless very powerful currents are employed, and even then the contractions soon cease; and that, whether we act on the nerves or on the muscles."

The therapeutical use of the current receives our author's attention. Speaking of *Paralysis*, he says—

"Abstraction being made of all purely theoretical ideas, and independently of all hypothesis of the nervous force, we may admit that, in certain cases of paralysis, the nerves undergo an alteration analogous to that which they would suffer if they had been subjected to a continued passage of the electric current. We have seen that, in order to restore to a nerve the excitability lost by the passage of this current, it is necessary to subject it to the action of the inverse current.

"I must add, in favor of the efficacy of the therapeutic use of this current, that a limb, although paralyzed, constantly suffers some contractions when it is submitted, either to the passage of a current or to the action of electric discharges; and these contractions favor the restoration of the functions of the muscles. Experiment confirms these ideas: divide the two sciatic nerves of a living frog, allow one of the two limbs to remain quiet for ten, fifteen, or twenty days, and submit the other, two or three times a-day, to the action of the current. The latter will continue to contract, whilst the other will fail to give any contractions when the current is applied to it.

"I am anxious to state to you some rules which I consider as important in the application of the current to the the treatment of paralysis. You should always commence by employing a very weak current. This precaution seems to me now more important than I formerly believed it to be, having seen one paraly tic patient seized with true tetanic convulsions under the action of a current furnished by a single element. Take care never to continue the current for too long a period, especially if it be energetic. Apply the interrupted current in preference to the continued one; but after *twenty* or *thirty* shocks, at the most, allow the patient to have a few moments' repose. Both practice and theory seem to prove, that the interrupted current is more useful than the continued one.

"A pile, with Mason's wheel, or still better, the electro-magnetic machine, is the most convenient apparatus for this purpose. Electro-magnetic apparatus are now constructed, in which the interruptions of the current are made without the necessity of an assistant.

"We may employ, as conductors, two ribbons of sheet lead or copper. The extremities, which are placed in contact with the skin, should be covered with cloth moistened with salt and water. In some cases it is useful to employ, as extremeties of the conductors, acupuncture needles.

"The number of authentic cases of paralysis cured by the electrical treatment, is already sufficiently great to encourage physicians and patients to persevere in its use. Perseverance indeed is indispensable in the application of the electric current, for without it, successful results are impossible."

He also proposes this remedy in Tetanus.

"The use of the electric current has been suggested in another malady, namely, tetanus. I believe I am the first who has attempted its application to man.

"The principles on which is founded its employment for the cure of this disease are the following. A current which circulates by jerks in an animal during a certain time, produces tetanic convulsions; the direct current, if continued sufficiently long, produces, on the contrary, paralysis. From this it was concluded, that the continued passage of the latter, in a tetanized limb, would destroy this condition, by producing a state more or less allied to paralysis. The truth of this conclusion is demonstrated by facts. In operating upon frogs which have been tetanized by narcotics or hydrocyanic acid,

we observe a fit of tetanus cease under the influence of the prolonged passage of a direct current. The frogs die without presenting those convulsions, which are observed to take place when these animals have not been submitted to the direct current.

"The effects produced by the application of the electric current is a case of tetanus, which I published in the *Bibliotheque Universelle* (May, 1838,) appeared to me in some degree to prove the truth of the scientific principles which I have explained to you. During the passage of the current the patient experienced no violent convulsions; he was able to open and shut his mouth; and circulation and perspiration appeared to be re-established. Unfortunately, this amendment did not continue long; the disease being occasioned, and kept up by the introduction of foreign bodies into the muscles of the leg. Perhaps more satisfactory results from the electric current may be expected, in cases where tetanus has not been caused by a traumatic injury: moreover, we ought already to be thankful in being able to lessen the sufferings to which this dreadful disease gives rise.

In Urinary Calculi.—Finally, it has lately been proposed to dissolve vesical calculi, and resolve cataract by the electric current. It is sufficient, however, to remember, that the substances which compose urinary calculi are insoluble in water, to be convinced that such an application has no basis to rest on.

"*In Cataract.*—As for cataract, I would remark that by changing the position of the poles of a current, which has been made to pass through the albuminous liquor, we never find that the albumen coagulated at the negative pole is redissolved at the positive pole. It is possible, therefore, to create a cataract but impossible to destroy it.

"*In Aneurism.*—Petrequin, of Lyons, has recently proposed the use of galvano-acupuncture for curing certain aneurisms. This application appears to be founded on the property which the electric current possesses, of coagulating the serum of the blood, and, consequently, of partially filling up the aneurismal sac."

Two lectures are devoted to the *nervous force*, in which a multitude of curious facts is presented. The author thus contrasts the effects produced by electric irritation of the nerves and those determined by other stimulating agents:

"1. Electricity is the only irritant which can excite, at one time sensation, and at another contraction, according to the direction in which it traverses a nerve.

"2. The electric current alone, in passing transversly across a nerve, produces no phenomena due to the excitability of the nerve.

"3. The electric current has no effect on the nerves, that is, it neither causes contraction nor sensation, when its action on the nerve is prolonged.

"4. The electric current alone can modify the excitability of a nerve, and even rapidly destroy it, when the current circulates in a certain direction, and oan preserve or augment the excitability, when passing in the opposite direction.

"5. Lastly, of all irritating agents, the electric current is the only one which possesses, for a long space of time, the power of reviving the excitability of the nerve, when it has become very much enfeebled in respect to other stimulants."

The analogy between the Electric and Nervous Forces is next pointed out.

"These differences between the action which the electric current exercises on the nerves, and that of other irritants, evidently show that the first is more simple than the others. Hence arises the analogy between the nervous force and the electric current, which the earliest observers of galvanism faintly perceived.

"But ought we, from this analogy, to conclude that the nervous force is merely an electric current? Let us be cautious in assuming such an inference, which is too often adopted as one of the best demonstrated experimental truths.

"Let us, in the first place, inquire whether with the instruments, which physical science furnishes us, the electrical current can be discovered in the nerves of a living animal? Can this current exist there, and if it does, would it be under the requisite conditions to be endowed with the characters of the nervous force.

"The muscular electric current on which we have dwelt at some length in one of the preceding lectures, is shown, by experiment, to owe its origin to chemical actions going on in the muscles. We have seen that this current exists in the integrant parts of the muscles, as well as between the molecules

of two bodies which enter into combination; that it circulates there without any regularity, and one might say that, as Ampere imagined, it took place in magnetizable bodies, and that it is only by an experimental arrangement that we can discover the presence of this current. We have also shown that the nerves have no direct influence over the production of this current, and that their office is limited, in experiments on the muscular current, to that of a slightly conducting body, communicating with certain parts of the muscle."

Matteucci comes to the conclusion, as the result of all his experiments, that there are no electrical currents in the nerves. He says—

"It was important to search for the presence of an electric current in the nerves of a living animal. I shall refrain from noticing here all the experiments which have been undertaken with this object in view, and which have terminated in the announcement, at one time, that this current did exist—at another time that it did not exist. The most conscientious and best established conclusion is this:—*In the present state of science, and with the means of experimenting which we at present possess, no sign of the electric current is found in the nerves of living animals.*

"Some persons have asserted, that steel needles introduced into the muscles perpendicularly to the direction of their fibres, become magnetic, especially at the moment when the muscles contract. From this it has been concluded, that there existed an electric current in the nerves, and that the circuit was established as in a spiral or an electro-dynamic cylinder.

"I have repeated these experiments, by introducing steel or iron needles into the muscles of living animals, and in all directions relative to their fibres. In order to convince myself of the magnetization of the needles, thus plunged into the muscles, I made use of those of a very good astatic system, and even of those of the sideroscope of Lebaillif. I never obtained an affirmative result. I placed the recently prepared thigh and leg of a frog, in the interior of a spiral of varnished copper wire, the extremities of which were connected with those of a second smaller one, in which there was a soft iron wire. I afterwards irritated the nerve of the frog, observing at the same time, if an induced current transversed the spiral, and magnetized the iron wire. All my researches were fruitless.

"I likewise tried the effect of introducing into an exposed nerve of a living animal, the conductors of a very delicate

galvanometer by two points, as far apart as possible. I operated upon animals under the influence of certain narcotic poisons, and I excited strong muscular contractions in them, at the moment when I placed the two wires of the galvanometer in the nerve; but I must confess that, whenever the experiment was well made, I never obtained evident and constant traces of the electric current.

"At the school of Alfort I made, in conjunction with Longet, an experiment of this kind upon a horse. We employed a very delicate galvanometer; the nerve was exposed for a considerable extent of its course, and I could traverse it with the platinum extremities of the galvanometer, by passing from a distance of 2 or 3 centimetres to that of 15 or 20. We never obtained distinct signs of the derived current, and in a constant direction, even when the muscles of the animal were violently contracted.

"Lastly, I may add that, from what we know of the properties of electricity, and of the laws of its propagation, it is impossible to conceive the existence of a current circulating in the nerves. In order that an electrical current should pass from one extremity of the nervous system to the other, it would be necessary to compare the nerve to a metallic wire varnished or otherwise insulated, an assumption which is not in accordance with fact. An electric current which, subjected to the will, would set out from the brain to reach the muscles, by traversing the nerves, could not be stopped in its course by the ligature of the nerve; whereas, we well know, that the propagation of the nervous force is prevented by that proceeding. Lastly, its circulation in the nerves requires that the nervous system should form a closed circuit; but the labours of anatomists are very far from having proved such an arrangement, especially in the ultimate ramifications in the muscles, where it would be especially necessary.

"I have often tried an experiment, which, had it given me a positive result, would have proved, in an indirect manner, that the nervous system forms a complete chain for the electric current. I exposed a nerve in a living animal at two distinct parts of its course, namely, at the top of the thigh, and at the lower extremity of the leg. I introduced the latter into a spiral, similar to that which I described a few minutes ago, and which put into communication with a second much smaller spiral, containing within it a soft iron cylinder. Through the nerve, thus prepared, I passed the electric current but never observed constant signs of the induced current in the spiral, which would certainly have occurred if the current had

traversed this species of spiral which, it is presumed, is formed by the nervous ramifications distributed over the muscles.

"Let us conclude, then, that the electric current does not naturally exist in the nerves of a living animal. The laws of its propagation require conditions which are not found fulfilled in the nervous system; the propagation of its force is interrupted by causes which could not produce a similar effect upon the electric current."

His speculations concerning the production of nervous force are interesting. We cite them, as follows:

"In conclusion, let us say a few words on the production of the nervous force. Although it be true that we possess no knowledge of it except in living animals, and consequently, want the apparatus to accumulate it and study its laws, out of the animal itself, yet we should not abandon all physical analogies in the investigations which we make relative to its mode of production.

"Whenever a movement occurs, or the effect of force is manifested, we are certain that some transformation of matter must have taken place. Wherever a force is exerted, a chemical action precedes it. Caloric, electricity, and light, furnish us, at every instant, with evidence of this truth. But putting aside all analogies, let us examine the conditions under which the development, of what we call nervous force, takes place in animals. A man or animal, after a long walk, having put his machine into motion, is fatigued, and needs repose and nourishment. Although it be true that facts are wanting to establish an intimate and really scientific connexion between the effects of labor, repose, and nourishment, on the one hand, and of the loss and reparation of the nervous force on the other, yet we cannot abstain from discussing these facts, complicated though they be, on the principles of mechanics and general physics.

"Muscular exercise, of whatever kind, is constantly followed by a loss of power, and as we see the animal machine recover its aptitude for exercise, after having obtained food and rest, we must admit that the force necessary to muscular action may arise from the chemical actions of nutrition; inasmuch as, by means of the latter, and of repose, this force is reproduced and accumulates in the nervous system. Interrupt for a certain time the sanguineous circulation in a muscle,

and soon this becomes incapable of contracting; but with the return of blood the muscular force revives. In animals, where circulation and respiration are very active, the development of muscular force is more considerable.

"But among the numerous chemical actions that occur in animals, which is the one that gives rise to the force which is put in action during muscular contraction? It is impossible to give a satisfactory answer to this question.

"Physiologists now admit that heat is produced by the combustion of fatty matters, and principally by that of bodies into which fecula is transformed during digestion: the nervous force may be due to chemical actions which take place during the changes which the neutral azotized substances of the tissues undergo. But I know of no experiment which directly proves this difference of origin, between heat and the nervous force.

"Of all chemical actions of which the animal is the seat, the only one which we perfectly know, and which we have even measured, is that which produces carbonic acid. On the average, man converts and exhales, in the form of carbonic acid, 10 to 15 grammes of carbon per hour.

"Setting out with these data, we shall endeavor to compare the nervous force which results from this chemical action, by representing the mechanical work done by a man in the space of one day, with the quantity of work that this same action could produce in the same space of time, either by means of heat, or by electricity developed by it. In other words, it is possible to ascertain whether we obtain with steam engines, or electro-magnetic apparatus, and by means of a determined chemical action, a mechanical effect equal to, or different from, that which is produced when this same action takes place within an animal.

"But before commencing this investigation, I cannot refrain from observing, that, in order to establish this comparison, it is necessary to assume one of the two following hypotheses: we now know that heat, electricity, and nervous force, are developed in animals, and we assume that the causes of their production reside in the chemical actions of nutrition. But we may suppose that they are produced in certain constant quantities, and independently one of the other; or, indeed, that from a certain chemical action there never follows but a certain quantity of force, whatever be the form in which it is manifested.

"In order to make myself better understood, I will give an example: zinc burns in oxygen, producing light and heat; this

same zinc can be oxydized by decomposing water and developing only heat, or heat and electricity, if we touch it with platinum wire. Suppose, now, that we could transform these forces into a certain quantity of mechanical work done by them, we might say that the sum of these quantities is the same in every case, and that when one happens to fail, the other is substituted for it, by a relative quantity drawn from their mechanical equivalents. But it might equally happen, that they were developed independently of each other. Experiment would reply in favor of this latter opinion. I measured the heat disengaged by zinc oxydized by decomposing water, and I repeated this experiment by having, in addition, the disengagement of the electric current; the heat was invariably the same, and nearly equal to that which zinc produces when oxydizing by burning in oxygen.

"We might then consider all the chemical action of carbon which combines with oxygen in animals, as the cause of nervous force, independently of the heat and electricity that it may produce; and we would ask whether this action, taking place in the animal itself, determines an effect analogous to, or different from, that which it would determine, if it occurred in a steam-engine or in an electro-magnetic apparatus.

"While travelling on one occasion with the celebrated Robert Stephenson, we were obliged to send a man on foot forty miles. I asked Mr. Stephenson what quantity of carbon was necessary to transport a man forty miles by a locomotive. He replied, about 5 kilogrammes [about 11 lbs. avoirdupoise.]

"The person we had despatched accomplished his journey, by walking, in less than ten hours, consuming by his respiration a quantity of carbon not exceeding 150 grammes, that is about $\frac{1}{64}$ of the quantity which would have been necessary if this transit had been effected by a locomotive. M. Dumas has calculated how much carbon would be burnt in a steam-engine, in conveying a man from the level of the sea to the summit of Mount Blanc. The quantity would be from 1000 to 1200 grammes; but a man accomplishes this feat by a two days' march, and consumes 300 grammes. The difference in the second example is not so great as in the first; because the useful result which we obtain from a stationary steam-engine, is much more considerable than that from a locomotive. It is equally true that the difference is very great, and that the work produced from nervous force derived from a certain chemical action, is much greater than that which this same action produces when converted into heat.

"I can show you in another way the great advantage which results from the transformation of chemical action into nervous force in an animal.

"I endeavored to measure the amount of mechanical work obtained, when applying to the nerves of a frog a current produced during the oxydisation of a given quantity of zinc in a pile. Here are the numbers obtained: three milligrammes of zinc, oxydizing in one day, furnish a current which, if we suppose that it could be continually applied to the nerves of a frog, would produce a muscular power equal to 5 419 kilogrammes, raised to one metre in height during the same interval of time. It is probable that these numbers are far from being accurate, and I intend hereafter to repeat these experiments: it is, however, certain, that the causes of error are all one way, and tend to represent as much smaller than it really is, the effect produced by the three milligrammes of zinc.

"The same quantity of zinc burnt, would yield a quantity of heat, which employed in forming steam, would execute work equivalent only to 0^k, 8304, raised to one metre.

"Finally, the current produced by the three milligrammes of zinc was applied to an electro-magnetic machine; and in this case we obtained 0^k, 96, raised to one metre.

"Everything, then leads us to the conclusion that the mechanical work developed by chemical action, and transformed into nervous force, in an animal, is very great; and that in all the machines which man has invented he is always, and will be perhaps for a long time to come, far from attaining that degree of perfection which exists in those machines which we know not how to imitate and can only admire.*

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* In the *Comptes Rendus* for the 15th March, 1847, Matteucci has drawn up the following summary of his hypothetical views respecting the nervous force:—

1. The nervous fluid is produced by the chemical actions of nutrition.

2. This fluid, developed principally in the muscles, is diffused there, and being endowed with a repulsive force between its parts, like the electric fluid, retains the elements of a muscular fibre in a state of repulsion analogous to that presented by electrified bodies.

3. When this nervous fluid ceases to be free in the muscle, the elements of the muscular fibre mutually attract each other, as we see happens in cadaveric rigidity.

4. This nervous fluid enters continually into the nerves, and from them passes to the brain, assuming in these bodies a new state which is no longer that of the free fluid: in this manner it passes from the muscle to the

Here we must close our imperfect analysis of this elaborate work—a work in which almost every class of readers will find a mass of curious facts that amply repay a careful perusal. The remaining chapters treat of *muscular contraction*, *circulation of the blood*, *vocal apparatus*, *hearing*, and *vision*, and treat them with signal ability.

ART. VI.—*A Dispensatory, or Commentary on the Pharmacopœias of Great Britain (and the United States); comprising the Natural History, descriptive Chemistry, Pharmacy, actions, uses and doses of the articles of the Materia Medica.* By ROBERT CHRISTISON, M.D., V.P.R.S.E., President of the Royal College of Physicians of Edinburgh, Professor of Materia Medica in the University of Edinburgh, and Ordinary Physician to the Queen for Scotland. Second edition, revised and improved, with a Supplement, containig the most important New Remedies. With copious Additions and two hundred and thirteen Illustrations; by R. EGLESFELD GRIFFITH, M.D., Author of a Medical Botany, etc., etc. Philadelphia: Lea & Blanchard. pp. 1008. 8vo. 1848.

Few medical writers of the present day are more extensively or favorably known than the author of the work, the title of which heads this article. By his learned and practi-

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nerve. According to the quantity of this fluid which ceases to be free in the muscle, the contraction is more or less strong.

5. This state is that of the nervous current, or species of discharge which proceeds from the nervous extremities to the brain, and returns in the contrary direction, by the act of the will.

6. When this discharge takes place, muscular contraction ought to take place, the fluid ceasing to be free in the muscles.

7. This discharge of nervous fluid, acting as in the electric fish, explains the induced contraction; in both cases, and by the same disposition of parts, the nervous current produces a species of electric polarization of the elements, either of the muscular, or of the electric apparatus: the difference of effects will be due to a different number of elements, to their dimensions, &c.

8. The electric current impedes the nervous discharge, if it be directed in the contrary direction; as in the direct current: the nervous fluid not being able to enter and accumulate in the nerve; this loses its excitability. The contrary takes place for the inverse current, which goes in the same direction as that of the nervous discharge: the nervous fluid is found accumulated in the nerve, and its excitability is augmented.—J. P.

cal treatise on *Poisons*, Dr. Christison has rendered his name familiar to all the readers of medicine or medical jurisprudence, and his present volume is worthy of a place beside that classical and popular work. It is not needful that we should compare it with the other pharmacopœias extant, which enjoy and merit the confidence of the profession: it is enough to say that it appears to us as perfect as a Dispensatory, in the present state of pharmaceutical science, could be made. If it omits any details pertaining to this branch of knowledge which the student has a right to expect in such a work, we confess the omission has escaped our scrutiny.

In the introduction, some general processes in pharmacy, illustrated by wood-cuts, are given, which the student will find intelligible and instructive. He will learn how acids, alcohol, the alkalis, extracts, and all the other forms of medicaments are prepared, and will find the directions so simple and clear that he will study them with pleasure. Under the head of *volatile oils*, a table is given, showing the proportion of oil obtained from the chief medicinal vegetable substances. Under the head of *Weights and Measures*, all the information that the student requires on that subject, is presented. French measures and weights, so often given in our medical journals, are reduced to our own standard. The method of taking specific gravity is referred to with sufficient minuteness, and the various instruments employed in the process described. The tables under this head will be found convenient for reference. The relation between different thermometrical scales is given in detail, and the student has only to cast his eye over the tables to see the corresponding degrees of the centigrade, Reaumur, and Fahrenheit's instruments. Formulæ for cooling or freezing mixtures are given, exhibiting the degree of cold produced by each, as also the effects of temperature. Then we have the "chemical elements, with their symbols and equivalents;" tables showing the solubility of salts; and finally, an explanation of the terms used in prescriptions, all of which, however dry it may ap-

pear as thus given in outline, is of surpassing convenience and utility for reference.

The introduction is finished in forty-five pages, and we come to the materia medica, the articles of which are arranged alphabetically. Among the most important new remedies, which have come into general use since the publication of the last Edinburgh Pharcopœia, in 1841, we find the following articles enumerated in the Supplement: Gallic acid, iodide of arsenic and mercury, iodide of arsenic, sulphate of Bebeerina, effervescing lime water, Indian hemp, chloroform, lactate, chiate, and ammonio-tartrate of iron, matico, cod-liver oil, chinoidine, medicinal naphtha, iodide of sulphur, chloride and valerianate of zinc.

Gallic acid is gaining reputation as an astringent, given internally, in chronic mucous discharges from the bowels or urinary bladder, and especially in hemorrhages from the uterus, kidneys, and lungs. The dose is three grains, three times a day, in the form of pill, made with liquorice root powder and conserve of red-rose.

Solution of iodide of arsenic and mercury is indicated in those forms of disease which are believed to be benefited by the constitutional action of mercury, iodine, or arsenic.—"Scaly constitutional eruptions, constitutional syphilis, and lupus, are the diseases to which it has been most frequently applied. In strumous lupus its external application as a wash to the sore, conjoined with its internal administration, has appeared to be useful."

The iodide of arsenic has been highly recommeded as a remedy in chronic skin diseases, but there is much doubt whether it possesses any superiority over arsenic.

Sulphate of bebeerina is proposed as a substitute for the salts of quinine; it is a tonic and antiperiodic. It is said not to have as great a tendency as quinine to produce ringing in the ears, vertigo, headache, and other symptoms of affection of the nervous system. Though not equal to sulphate of quinine as a febrifuge, "it is a valuable substitute for that

drug, when it cannot be procured in sufficient quantity, at a reasonable price." Dr. Christison says, "in many forms of disease prevalent in this country its efficacy is undoubted. Periodic headache, and other periodic neuralgias readily yield to it. By many oculists it has been found an effectual substitute for sulphate of quinine in strumous ophthalmia." The dose, as a tonic, is from one to three grains, and from five grains to a scrupel as a febrifuge.

Indian hemp promises to be an important article of the materia medica, its inertness, of which some have complained, having resulted from the use of a spurious preparation. "I have used it," says Dr. Christison, "a good deal, and with decided success, in diseases at large, to obtain sleep." It has been used advantageously in toothache, rheumatism and even in tetanus.

Dr. Christison speaks favorably of chloroform. In many diseases he believes it will prove a valuable resource, and may be given internally, as well as by inhalation. He does not appear to entertain any serious fears of its deleterious action, whether employed as a remedy in disease, or as an agent to destroy sensibility to pain.

Cod-liver oil has been frequently used in this country in strumous affections, and enjoys some reputation as an alterative remedy. Its efficacy has been generally ascribed to the presence of iodine, but Dr. Christison says, "no explanation of its virtues has been yet given." It improves the complexion, and tends remarkably to increase the deposition of fat, showing that it undergoes digestion. Our author thinks its efficacy in strumous affections has been exaggerated by its admirers, but adds, "there is no doubt that it is occasionally serviceable."

Naphtha, says Dr. Christison, "certainly possessas the property of allaying the cough and febrile excitement of phthisis pulmonalis," but experience has not borne out the sanguine hopes of its panegyrists as a remedy in that disease. He adds, that he "can amply confirm all that has been said of it

as an anti-emetic remedy in cases of chronic vomiting.—Even creosote has appeared to be scarcely so efficacious."

Iodide of sulphur, in the form of ointment, possesses merits as a remedy in chronic cutaneous diseases.

Valerianate of zinc is an uncertain remedy, depending chiefly on the method of obtaining the valerianic acid. This salt has been much extolled as a tonic antispasmodic of great powers, especially in the treatment of neuralgic affections, in hysterical subjects.

We cordially recommend this work to such of our readers as are in need of a Dispensatory. They cannot make choice of a better.

ART. VII.—*Elements of Natural Philosophy; being an Experimental Introduction to the Study of the Physical Sciences.* By GOLDING BIRD, A.M., M.D., F.R.S., F.L.S., Fellow of the Royal College of Physicians; Late President of the Westminster Medical Society; Corresponding Member of the Philosophical Institute of Basle, of the Philosophical Society of St. Andrews, of the Medical Society of Hamburg, etc.; Assistant Physician to, and Professor of Matera Medica at Guy's Hospital. With three hundred and seventy-two Illustrations. From the Revised and Enlarged third London edition. Philadelphia: Lea & Blanchard, 1848. 12mo. pp. 402.

It is an admitted fact, that numbers of young men, in this country, enter upon the study of medicine without sufficient preliminary education. That they, nevertheless, make safe and successful practitioners, is also generally admitted. But how to give them a more finished education—how to make them men of science—to enlarge and adorn their minds with knowledge not purely professional, so as to give to medicine greater dignity, and render it what it claims to be—a learned profession—this is the grave question upon which the medical mind of our country is at present engaged. We suppose

that the evil complained of will continue to prevail, to some extent, in every stage to which our profession is susceptible of being advanced. Young men will press into it before they are prepared, and then the care of their instructors must be how to remedy the deficiencies of their scholastic training.

Dr. Bird, in the work before us, has furnished an invaluable aid to the private medical instructor. Let these "Elements" be placed in the hands of every medical student who has not made the *Physical Sciences* an object of diligent study. Let him be required to master the principles here so happily unfolded, and in one most important branch of knowledge, at least, he will not be charged with being deficient. It is worse than useless for the young man who has become conscious of the inadequacy of his preliminary education, to stand repining over his ignorance. Let him go diligently to work to supply what is wanting. With such books as are accessible to him it is his own fault if he remain long ignorant.

It would be foreign from the scope of our Journal to go into an analytical notice of an elementary work on Natural Philosophy. Some of the topics, however, bear directly on medicine, and these would afford us matter for an extended article, if we had not already occupied nearly all the room at our command with extracts from a work on a kindred subject. In regard to the *electricity of man*, we have presented at some length the results at which Matteucci arrived from his numerous experiments on the lower animals. From Dr. Bird we subjoin some interesting statements on the same curious subject:

"Within the last few months, the results of some researches of Liebig have rendered it very probable that a large proportion of the electricity of muscular structures is owing to the mutual reaction of an acid and alkaline fluid. The blood, in a healthy state, exerts a decided and well marked alkaline action on test-paper: now it is remarkable that although a piece of muscular flesh contains so large a proportion of alkaline

blood, still that when chopped up, and digested in water, the infusion thus obtained is actually acid to litmus paper. This curious circumstance is explained by the fact announced by Liebig, that although the blood in the vessels of the muscle is alkaline from the tribasic phosphate of soda, yet the proper fluids or secretions of the tissues exterior to the capillaries is acid from the presence of free phosphoric and lactic acids. Thus in every mass of muscle we have myriads of electric currents arising from the mutual reaction of an acid fluid exterior to the vessels on their alkaline contents. Whatever may be the ultimate destination of this large quantity of electricity, it is at least remarkable that a muscle should be really an electrogenic apparatus. We have thus two sources of the electricity of muscles—the effects of metamorphosis of effete fibres on the one had, and on the other the mutual reaction of two fluids in different chemical conditions. It is certainly curious thus to find a muscle, an organ long regarded as the motor apparatus of the bony levers of our frames, invested with new properties. In the course of twenty-four hours, a considerable proportion of watery vapor exhales from the surface of the body. This has been variably estimated, and in all probability is liable to great variation, but from thirty to forty-eight ounces of water may thus be got rid of from the system. It is more than probable that the evaporation of this amount of fluid is sufficient to disturb the electric equilibrium of the body, and to evolve electricity of much higher tension than that set free by chemical action. Evaporation may thus probably account for the traces of free electricity generally to be detected in the body by merely insulating a person and placing him in contact with a condensing electrometer. Pfaff and Ahrens generally found the electricity of the body thus examined to be positive, especially when the circulation had been excited by partaking of alcoholic stimulants. Hemmer, another observer, found that in 2422 experments on himself, his body was positively electric in 1252, negative in 771, and neutral in 399. The causes of the variations in the character of the electric condition of the body admit of ready explanations in the varying composition of the perspired fluid. For if, containing, as it generally does, some free acid, it by its evaporation would leave the body positively electric, whilst it merely contains neutral salt, it would induce an opposite condition."

SELECTIONS

FROM

AMERICAN AND FOREIGN JOURNALS.

On the operation of Gastrotomy as applicable to cases of Obstructed Œsophagus. By Professor SEDILLOT. — The operation here proposed consists in incising the abdominal parietes opposite the anterior wall of the stomach, making an opening into the latter, and connecting the edges of this opening with the external wound, so as to form an artificial fistula, by which sustenance may be administered in cases where irremediable obstruction of the natural passage exists. Such cases, if left alone, are quite desperate, their only possible termination being death by famine; and Sedillot, therefore, holds that it is justifiable to interfere by any means which offers a chance of safety. That the operation which he proposes is not impracticable, is proved by various cases (such as that of the celebrated Alexis St. Martin), in which a stomachal fistula occurred, as a consequence of accidental wounds; and also by the experiments of Blondlot on animals, in one of which he kept a dog in health two years, nourishing him by means of an artificial fistula of the kind described. Experiments of this description have also been performed by Sedillot himself, with a successful result. With these facts before him, he argues, that, although gastrotomy ought not to be proposed where there is a probability of life being continued for some time without interference, yet in those in which death is evidently imminent, and where there is no other resource, the surgeon ought not to hesitate about giving his patient the chance of a prolonged existence, and freedom from suffering.

If this be admitted, it is evidently of great importance to keep in view those circumstances under which obstruction of the œsophagus might render such an operation necessary. The author, therefore, enters into an elaborate review of all those lesions of the œsophagus which lead to permanent constriction of the natural passage. He gathers from pathological writers a great variety of cases, which he arranges under fifteen heads, viz:—

1. Congenital absence of part of the œsophagus.
2. Stricture in consequence of tumors in the neighborhood of the œsophagus.
3. Tumors formed between the tunics.
4. Hernia of the mucous membrane.
5. Polypi.
6. Stricture, by atrophy of the tube, without appreciable lesion of its walls.
7. Atresia, from cicatrices, with loss of substance.
8. Fibrous stricture.
9. Fibrous degeneration of the muscular coat.
10. Cartilaginous stricture.
11. Osseous transformation.
12. Complete obliteration.
13. Cancerous stricture.
14. Impermeable stricture of the cardia.
15. Fatal œsophageal stricture without known cause.

The cases to which the operation is applicable, as above enumerated, appear to be referable to two divisions; the first being those cases in which the operation is performed without hope of modifying thereby the original diseased condition, and merely to prevent death by hunger; the second, comprising cases in which the original condition is susceptible of modification, and where the establishment of a new passage to the stomach either assists the cure, or prevents the further progress of the disease. In this respect, the proposed operation has a close analogy in its mode of application to the more familiar one of tracheotomy.

The principal cases to which gastrotomy is applicable, according to Sedillot, with the double purpose above mentioned, are those comprised in the 4th, 7th, and 13th sections of his arrangement.

In the 4th series, in which the mucous membrane is thrust through the other tunics, so as to form diverticula, he holds that the constant passage of the food distending these abnormal pouches is certain to keep up the morbid lesion, and, even by dilating the pouches still farther, to hasten the ulti-

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In the 7th series, comprising all the wounds and inflammatory lesions of the œsophagus, in which there is hope that the judicious employment of catheterism might ultimately restore the tube to its function, Sedillot holds that gastrotomy will often permit us to continue this treatment when otherwise the death of the patient by inanition would have frustrated our efforts; and he believes that, in such cases, the chances of cure will often be greatly increased by the complete rest which is obtained in the intervals of treatment for the diseased portion.

Finally, in the truly cancerous lesions, where the diagnosis can be ascertained with any degree of certainty, he conceives repose of the part to be of the first consequence, as both catheterism and the passage of food through the cancerous part, tend very much to the rapid progress and fatal issue of the disease; and he thinks, therefore, that gastrotomy may possibily be found to be applicable to cancerous cases at an earlier period than that at which death by inanition is imminent.

It is necessary to state, that the operation has never yet been performed by Sedillot although he so strongly advocates its performane.—*Gazette Médicale de Paris.—American Jour. Medical Sciences.*

Tracheotomy in Tetanus.—Dr. Hughes stated at a meeting of the South London Medical Society, February 3d, that lately tracheotomy had been performed for the relief of tetanus from the belief entertained by some, that death occurred in many cases from spasmodic closure of the glottis, but it had entirely failed, showing clearly that this accident was not always the cause of fatal termination.—*Med. Gaz.—Ib.*

Iodide of Potassium a Cure for Nurses' Sore Mouth.—Dr. H. D. Holt states that every case he has treated of this disease "has yielded within forty-eight hours to the use of iodide of potash in gr. v. doses three times a day."—*N. Y. Jour. of Med.*

On the Treatment of Strictures of the Œsophagus by Catheterism and Cauterization.—M. Gendron is of opinion that many strictures of the œsophagus, which at first appear incurable, will be found to yield to careful and protracted treatment by the œsophagus-bougie, with occasional use of cauterization. He objects to the treatment proposed by Sédillot as being unpractical and hazardous. The use of the bougie, on the contrary, is in no way dangerous if due care be taken; and the objections of the patients to it are of short duration, as the œsophagus becomes very soon accustomed to the stimulus of the instrument. So long as there is any obstruction, it is necessary to support and guide the bougie in its passage downwards, by means of two fingers of the left hand introduced into the pharynx. Dilatation occurs very gradually, and sometimes there appears to be a re-contraction, rendering it necessary to return to a smaller size of instrument after some progress has been made. The completeness of the cure is to be judged of chiefly according to two circumstances:

1st. The ease with which a full-sized bougie can be passed, *using one hand only.*

2d. The disappearance of the tracheal rale, and unnatural quality of the voice, which almost invariably accompany an œsophageal stricture.

M. Gendron alludes to four cases in which he has succeeded in curing tight strictures of the œsophagus by the method here spoken of. Three of these were in consequence of diptherite; one was without known exciting cause; one was not more than eighteen days under treatment; the rest from one to two months. Cauterization, by nitrate of silver, was employed in three of the cases; in two repeatedly; in the other, only twice. The elastic bougie, or the whale bone staff with sponge, was used at short intervals; often several times in each day, but not so frequently after cauterization. *Gaz. Méd.—Ibid.*

The Eye naturally adapted for Distant Vision.—Volkmann and Hueck both agree in considering that, in its quiescent state, the eye is adapted to the vision of objects situated at the farthest point of distant sight, and not, as has been generally supposed, of those situated about midway between this and the point of distinct vision nearest to the eye. In this case, therefore, in order to accommodate itself to the

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vision of an object placed at any distance within the farthest point of sight, the eye will require but one act, that, namely, of increasing its focal distance in proportion to the nearness of the object under view: no act will be requisite to adapt it to the perception of distant objects, for in reverting to its state of rest, it at once resumes its capacity for distant vision, and retains it so long as its quiescent state continues. In proof of this opinion Volkmann observes that, in a state of rest, the axes of the eyes are directed towards a point even considerably beyond the most distant point of distinct vision, and that, since changes in the position of the axes usually correspond with changes in the adaptation of the eyes, it is improbable that the meeting of the axes beyond the most distant point of vision should coincide with an adaptation of the eyes for an object on this side the point. According to Heuck, this view will also explain the distinct formation of the image of distant objects on the retina after death; as also the far-sightedness induced by the action of hyoscyamus and of belladonna.—*Lond. Med. Gaz.*—*Ibid.*

Lunar Caustic for Cough.—Dr. Post, in a case of distressing cough, which came on at night and lasted for several hours, used, with the happiest effects, a strong solution of arg. nit. applied to the fauces. No disease could be detected in the chest, but the uvula was enlarged, and the pharynx and fauces were somewhat redder than natural. A solution of two scruples to one ounce of water was applied, and with complete relief, though the cough just before had been violent; and the patient remained almost free from it for the next twenty-four hours. — *Annalist.* — *New Jersey Medical Reporter.*

Political Distinction of Medical Men.—About thirty members of the National Assembly of France are physicians; of these M. Buchez, a distinguished writer, was the first President, M. Recurt, Vice President, and M. Trélat, Minister of Public Works.

In Prussia, ten physicians have been elected to the National Assembly recently organized; and in Italy, the Pope has appointed the celebrated Italian physician Farini, Under Secretary of State for the papal territories.—*Med. Ex.*

The Cholera.—Accounts from St. Petersburg of the 24th ult., state that the cholera had broken out there on the 21st, and many deaths had already ensued. Six large hospitals were opened in that city, and others were in course of preparation. At Moscow it raged with great violence, and out of 222 cases, 122 were fatal. Many other places are suffering from the disease. Still more recent accounts mention that cholera was frightfully on the increase in Russia. From the 12th to the 19th of June, there were 1224 new cases of the disease in Moscow, and 928 deaths on the last named day. The disease is also gaining ground at Kazan, Niznei Novogorod, Kostroma, Jaroslav, Vologda, Smolensk, Tula, and Wilna. It has also made its appearance in Penza, Tarkow, Olonetz, Wilska, and Orel.—*Med. News.*

Regeneration of the Crystalline Lens.—At a meeting of the Medical Society of the Upper Rhine, M. Stromeyer exhibited an instance of the regeneration of the crystalline lens after the operation for cataract, the patient having survived four years after the operation. The body produced had not the lenticular figure of the original lens, but was in the form of a ring, and perfectly transparent. M. Stromeyer attributed the annular form to the adhesion or collapse of the anterior and posterior walls of the capsule of the lens; and he advanced the query, whether, having in view the reproduction of the lens, one should seek to prevent adhesion of the opposed surface of its capsule.—*London Lancet.*

Asserted Specific for Asiatic Cholora.—Mr. Guthrie has communicated to the Royal Medico-Botanical Society, some documents which he received from Circassia, attesting the successful treatment of cholera, in the Russian army, in the Caucasus, by *naphtha*, exhibited in small doses of from ten to twenty drops, the dose being repeated if necessary, which is rarely the case.

Dr. Andreyeoski, in a letter to Mr. Guthrie, states, "Naphtha, or petroleum, not distilled, and the white is to be preferred, is an infallible remedy against diarrhea cholerica, which prevails during certain seasons, in the dose of from four to eight drops in a little brandy, white wine, or mint tea, taken cold; a single dose usually suffices to arrest the com-

plaint. The evacuations, which in this species of diarrhea are always liquid and glairy, become more solid and less frequent. Sometimes the dose requires repetition at the end of two or three days. The diet should not be too strictly, although carefully, regulated. In completely developed cholera of a deadly nature, the cures are not so constant, and from fifteen to twenty drops of the naptha are to be given for a dose. If they are vomited up, the dose should be repeated; a second is rarely required, if the first be retained. It acts evidently on the skin, and on the kidneys, and removes the cramps."

Prince Woronozow, the Russian Commander-in-Chief, writes Dr. Andreyeoski, "first met the cholera last year at Tamikhan, where it prevailed to a very serious degree. The hospitals I visited, contained the first day more than two hundred patients; the cases generally were very bad, and the mortality great. On inquiring of the colonel commanding the Cossacks why there were so few Cossacks among the sick, he told us that he made light of the cholera, because they employed the elixir of Woroneje, which proved successful in almost every case. Andreyeoski immediately procured the recipe for the elixir, and on the first appearance of the cholera in the convoy which accompanied me to the camp, he tried drops of that elixir with constant success. On examining the prescription, he found it to be a singular mixture of different matters, looking very like a quack medicine, but containing, among other strange, and, as he thought, useless substances, some specific, acting favorably in cholera, and he told me that naphtha, one of the principal ingredients, might possibly be that specific."

The stock of elixir being soon exhausted, Dr. Andreyeoski determined to try naphtha alone, and, as he expected, it succeeded, even in serious cases; but, in mere diarrhea, the success was immediate. "He has, however, always resorted to the elixir in cases to which he was apparently called too late, in the blue stage, accompanied by cramps, etc.; but even in many of these advanced cases, naphtha alone has proved successful. I have seen several of our officers quite blue, and in extreme suffering, who were cured by it. As to simple diarrhea during the existence of cholera, I do not know a single case which the naphtha failed to cure, when resorted to immediately." One of the Circassian chiefs was suddenly seized with cholera; before Dr. Andreyeoski could see him he had been bled, and was in the last stage of the disease; he was ordered some rum, and had two doses of the

elixir, which, with friction and warm clothing, restored him to life and health; but the convalescence was tedious.

Prince Woronozow, in a subsequent letter, sends Mr. G. the following formula for the elixir of Woroneje:—

℞. Spir. vini rect., Ovijss.
Sal ammoniac, ʒj.
Nitri depurati, ʒj gr. xv.
Piperis, ʒj gr. xv.
Aquæ regiæ, ʒss.
Aceti vini, Ojss.
Petrolei (naphthæ), ʒss.
Ol. olivæ, ʒss.
Ol. menth. piper., ʒvij.
Digere per horas xij, et cola.

Capiat cochlearia duo parv., pro dosi omni quarta parte horæ. *Medical News.*

A New Anæsthetic Agent.—According to the Morgenblad, there has been discovered a new mode of etherization which has been applied with great success. It perfectly replaces chloroform, and what is more important is, that the compound is of a very low price, and very easy to obtain. It is sulphate of carbon, which may be obtained in abundance from wood, charcoal, and sulphur, by means of a very simple apparatus; it is used in the same manner as chloroform. It was discovered by M. Harald Thanlow, an apothecary in Christiana, in Norway.—*London Lancet.*

The Use of Ice as a means of Arresting Hemorrhages.—From a paper read by M. Chassaignac on this subject, before the Academy of Medicine at Paris, we extract the following remarks:

Mucous hemorrhage often proves fatal in cases where its cause and mechanism are alike unknown. It would be easy in these cases, by means of a pair of forceps, to carry pieces of ice to the mucous cavities, place them exactly on the bleeding surface, and thus use them both as compressive and refrigerant means.

Ice may in this manner frequently be substituted with advantage for the actual cautery. In no cases has its employment been followed by gangrene, nor have the points of the

pieces, which become rounded in melting, ever wounded the parts to which they were applied. They leave an inoffensive residue, which enables the practitioner to dispense with those precautions which are absolutely necessary after the employment of caustic.—*Gaz. Méd.*—*British and Foreign Medico-Chirurgical Review.*

Retention of Urine in Cerebral Affections.—M. Von Broeck states that in these cases he has almost always found the application of large cupping-glasses to the upper and inner parts of the thighs give rise to speedy voiding of the urine.—*Rev. Méd. Chir.*—*Ibid.*

On Quinine in Acute Rheumatism. By Dr. Vinet.—Quinine has of late years been very freely used in France, in acute rheumatism, and Dr. Vinet states that he has arrived at the following conclusions, from observation of its employment in the various hospitals of Paris:

1. That given in quantities gradually increased from 15 to 45 grains in the twenty-four hours, in divided doses, it produces no notable accidents; but if the larger quantity be not sufficiently divided and taken at considerable intervals, vomiting, faintness, or cerebral disturbances occur.

2. The disturbances of the hearing, sight, and brain, are usually the first in appearing, and are far more prominent than those relating to the digestive organs. They usually cease upon mere suspension of the medicine.

3. Quinine, given in the above doses, exerts a remarkable and frequently a rapid, sedative power on the circulation and the pain, and an indubitable effect upon the general phenomena of the disease. In about half the cases submitted to it, these effects are prompt and durable, and in the other half slow, uncertain, and unstable; while in a few cases, no effect whatever follows.

4. The cases in which it proves most efficacious, are those in which the general and local symptoms are best marked.

5. In cases in which it procures a prompt cure, it may prevent the cardiac complication, and in those in which it is slower in its operation, it does not seem to favor the occur-

rence of this, which, however, when it does occur, requires the usual appropriate means for its removal.

6. The beneficial effects are generally the more promptly produced as the dose is large, such being often observed after a moderate amount of perturbation of the nervous system.

7. Given for a relapse of the disease, the effects are the same as when originally employed.—*L'Union Médicale.*

M. Aoudouard, an old practitioner, in a paper in the Revue Médicale, shows that bark has been recommended by several of the best writers on gout and acute rheumatism, and refers to a paper approving of it, which he himself published in 1808; but, he adds, the cures effected by him and his predecessors were accomplished by, at most, 2 oz. of bark daily, while now an equivalent of quinine, equal to 5 or 6 oz., is given. But then the bark cured without producing any ill effect on the brain, or any other bad consequences, which cannot be said of the quinine.—*Revue Méd.*

In No. 28 of L'Union Médicale, M. Fauconneau-Dufresne adds two other instances to the now numerous ones on record, of death occurring from excessive doses of quinine. Some practitioners have given even a drachm and a half per diem; but death resulted in one of these cases from a scruple dose.—*Brit. and For. Med. Chir. Rev.*

Metallic Quicksilver in Ileus and Obstructed Bowels.—Several cases of utility of quicksilver in ileus have been recently published in the German journals. Dr. Schubert relates one of a man to whom every internal and external medicine had been given, until the incessant vomiting obliged the abandonment of all of the former. The constipation was most obstinate, and the abdomen much distended, but there were no signs of inflammation. The patient seemed at the last extremity, when Dr. Schubert, remembering two similar cases he had seen so treated with success, ordered him 4 oz. of quicksilver every half hour. His death seeming inevitable, only two doses were given; but after two hours he had stools, and soon recovered.

Dr. Löwenhardt refers to a work published by him in 1838, in which he sets forth the advantages derivable from this substance, and in the paper before us details additional cases in

illustration. The cases now added are those of volvulus, internal incarceration, spastic ileus; inflammatory ileus, after the inflammatory symptoms are removed; incarceration persisting after the operation for hernia, probably from the agglutination of the parietes of the canal by exuded mucus; and especially *very obstinate vomiting*. All the cases he adduces were not cures, and he gives the post-mortem examinations of some, from which it appears that the mercury sometimes passes through an intussusception, without removing it.—*Kasper's Wochenschrift.—Med. Zeitung.—Ibid.*

Cause of the Fatality of Inflammation of the Upper Lobe of the Right Lung.—M. Hervez de Chegoin has for some time had his attention drawn to the peculiarity of the symptoms and the especial danger, of pneumonia attacking this part of the lung. Such patients speedily exhibit all the signs of exhaustion, a very small pulse, a death-like pallor of countenance, peculiar disturbance of the intellectual faculties, nausea, and diarrhea. Some complain, too, of intense pain in the clavicular region; the expectoration and cough are very slight, and crepitation is speedily exchanged for a dull *souffle*. The general and local signs of the inflammation are in fact very slightly displayed, although it almost always proves fatal. An autopsy of such a patient, which recently occurred to him, he thinks, throws some light upon the matter. Examining the organs exactly *in situ*, he found, although the patient had lived thirteen days, the upper lobe was only in the first stage of hepatization, and that this now firm body exerted great compression upon the *vena cava superior*.—This, he conceives, may explain the slow progress of the disease, the small pulse, the peculiar cerebral disturbance, etc. And if this view be correct, instead of being deterred from bleeding these patients by their apparently exhausted state, our measures should be only the more vigorous; as the only chance of relief is the removal of the engorgement of the lung, which, by compression of the vein, impedes the circulation.—*L'Union Médicale.—Ibid.*

Foreign Bodies in the Air-Passages.—Dr. Mason Warren relates three interesting cases, with the hope of contributing somewhat to the more accurate definition of the line of prac-

tice that should be followed in these emergencies. In the first, a garden-bean entered the trachea while a girl, æt. 8 years, was laughing, and the eventual symptoms gave every reason to believe that it had reached the left bronchus. As the irritation produced was only occasional, an operation was delayed as long as possible, in hopes that the body would be spontaneously discharged; but two days after, symptoms of suffocation manifesting themselves, it was resorted to. It was rendered difficult by the tumefaction of the neck produced by venous congestion and the struggles of the child; and before the trachea was opened, a crack was heard as if a portion of the lung had given way, and a small tumor was forced up in front of the left side of the trachea during each inspiration—the dyspnœa being henceforth mitigated. The bean, much swollen, was removed with some difficulty when it rose into the trachea. The child did well.

The second case occurred in the person of a boy between two and three years old, who had swallowed a horse-shoe nail. For some days after, he suffered severe occasional suffocative paroxysms, apparently produced by the nail mounting up from the bronchus to the trachea. These became so imminent, and the child's strength was so rapidly failing, that it was resolved to operate. Shortly prior to the period determined upon for this, a violent suffocative cough, accompanied with much stringy mucus, occurred, after which all symptoms of the presence of a foreign body disappeared. It was believed, from subsequent symptoms, that this had entered the fauces enveloped in the mucus, and had then been swallowed.

The third case was that of a young woman who had swallowed a pin. The patient's sensations indicated the left side of the larynx as the site of the foreign body. Attempts were made to dislodge it by the finger, and she was afterwards bled, to subdue the irritation caused by these and the constant cough. While awaiting a renewal of the attempts, the pin became spontaneously dislodged, entered the throat, and was swallowed.

These and similar cases on record lead to the following conclusions:

1. We should not leave any soft body liable to increase of bulk from heat and moisture to the chance of spontaneous expulsion, especially in children, in whom the larynx is comparatively small.

2. Metallic or other hard substances, when engaged in

the larynx, or lodged in the lungs, may be left with more impunity.

3. If the substance is fixed in the bronchus, and the patient young, the prospect of seizing it by instruments carried through the wound is very small. Mr. Liston thus removed with difficulty a bone from the right bronchus of an adult.

4. Some doubts may, however, arise as to the propriety of leaving a foreign body in the lungs, without an effort to remove it: for although it may become detached, as it frequently does, after many months or years, yet fatal organic lesions are not unfrequently the result.

The judgment of the surgeon must be determined therefore by the circumstances of the particular case.—*Boston Med. and Surg. Jour.—Ibid.*

An easy Means of rendering the Ulnar Artery accessible to the Finger or even to the Eye.—The means suggested by M. Malgaigne, the efficacy of which the reader may at once test upon his own person, will be found of great utility, when circumstances prevent our feeling the pulse at the radial artery, or when it is desired to take up the ulnar. He thus describes it:

I have several times had occasion to place a ligature around the ulnar artery for lesions of this vessel; and when the cellular tissue is gorged with effused blood, and it is necessary to seek it at a considerable depth, I do not hesitate to term it a very difficult operation. Perhaps the means I am about to state will assist in removing the principal difficulty, which especially depends upon the depth of the artery. If the fingers and hand are turned forcibly backwards upon the dorsal aspect of the forearm, the relations of the ulnar artery become surprisingly changed. The deep-seated muscles upon which it lies are forcibly raised, and cause a sensible projection under the skin. The tendon of the flexor carpi ulnaris, on the contrary, retreats inwards and backwards; so that the artery, which, in the natural position of parts, is partly concealed by it, is now forced to a much more anterior plane, and lies four or five millimetres on the inner edge of the tendon. In many subjects it becomes more superficial than the radial, and it may be seen raising the skin at each pulsation.

In traumatic lesions of the vessel, the same position brings the wounded extremity of the vessel towards the surface, and

enables us to seize it; and in any case, when we wish to pass a ligature around the vessel, there will be no longer occasion to denude and draw away the tendon of the flexor.—*Revue Méd.-Chir.—Ibid.*

Cauterization of Irreducible Omentum.—Bonnet, of Lyon, dissatisfied with the practices hitherto recommended by writers on hernia, conceived the idea of excising the projecting mass of the omentum, having first applied a ligature to its pedicle, and then cauterizing the wound with the chloride of zinc. Three cases have occurred to him, in which the adherent omentum was thus successfully treated, in two of which gangrene had already commenced before the caustic was applied. Equal parts of flour and the chloride of zinc were used, and applied daily, the portion cauterized the day before being first removed.—*Gaz. des Hôp.—Ibid.*

Color of the Vagina in Pregnancy.—Dr. Albert states that of all the signs of pregnancy hitherto known, that derivable from the observation of the dark red color of the vagina is the best, seen as it is by the aid of a speculum at so early a period of pregnancy, and proceeding progressively with the development of the uterus. He has tested its utility in about thirty cases, and has besides examined, with the same success, a great number of animals at various periods of gestation.—*Zeitschrift für Geburtskunde.—Ibid.*

Condition of the Gums in Phthisis.—Dr. Frederick mentions a brick-red line on the gums of phthisical patients near the teeth. It is most marked over the incisor and canine teeth. Since his attention was turned to the symptom, he has observed it in numerous cases, but cannot say at what period of the disease it first shows itself. He has not met with it in other diseases.—*Ibid.*

On Examination of the Uterus by the Rectum.—M. Chomel urges that the exploration of the uterus by the rectum in ca-

ses of its malversation, is by far too much neglected; although information so derived, both as respects the position and diseases of the organ, is oftentimes quite conclusive. In exploring in this way, however, it must be remembered that on the posterior surface of the uterus in the retroverted state, a kind of furrow, separating the cervix from the body of the organ, is perceived, and that, in almost all women, pressure here excites intense pain, which many surgeons have mistaken for an indication of inflammatory action, of which it is no sign whatever.—*Gaz. des Hôp.—Ibid.*

On the Morbid Anatomy of the Intestinal Mucous Membrane in Infants.—Drs. Friedleben and Flesch have contributed an able memoir on this subject, illustrated by numerous cases. They adopt the following arrangement:

A. *Congestion.*
   a. Congestion of the mucous membrane itself.
   b. Congestion of Peyer's glands.
B. *Acute inflammation.*
   a. Primary acute inflammation of Peyer's glands.
   b. Secondary acute inflammation of Peyer's glands.
C. *Chronic inflammation of Peyer's glands.*
D. *Ulceration of the solitary glands.*
   a. Primary ulceration.
   b. Secondary ulceration.
E. *Softening of the mucous membrane.*
   a. Red softening.
   b. White softening.

They conclude with the following *résumé:*

1. The changes in the intestinal mucous membrane in infants are very frequent; in fact, the most frequent of any necroscopic appearances.

2. These changes are partly chronic, and are the special causes of atrophy, and partly the controlling causes of the acute and exhausting diarrhea, and other forms of diseases comprised under the head of softening of the stomach, and which are so frequently attended with important cerebral symptoms.

3. These changes, under the circumstances indicated, are more frequently met with in the dead body than those which are usually instanced as of common occurrence, viz: enlargement of the mesenteric glands, softening of the stomach, the formation of aphthæ in the intestinal canal, etc.

4. In a similar manner, these changes are far more frequent than those of the stomach, which, with the exception of softening of the cœcal extremity, are very rarely observed at this period of life.

5. Changes of the mucous membrane, excepting those of a secondary nature, are very strongly characterised.

6. Chronic inflammation of Peyer's glands is the most frequent change that we meet with; and it is likewise the most common anatomical cause of atrophy.

7. Next to this, but much less frequently, occur red and white softening, as causes giving rise to atrophy.

8. Red and white softening are only different stages of the same morbid process: simple and gelatinous softening constitute only a variety of form.

9. Chronic ulceration of the solitary glands of the small intestines is much less frequent in atrophy.

10. Acute inflammation of Peyer's glands is an extremely dangerous form of disease, to which sufficient attention has not hitherto been directed.

11. This disease is a true phlogosis, and is likewise specially induced by concomitant diseases (as, for instance, croupous lobular pneumonia.)

12. Most authors appear to be ignorant of this disease, and the few who have noticed the changes to which it gives rise, erroneously class it with dothinenteritis, a disease which, however, does not occur in this early period of life.

13. Secondary acute inflammation of Peyer's glands and inflammation of the solitary glands, which are generally of simultaneous occurrence, constitute a symptom of tuberculosis. We have always found, in these cases, tuberculosis of the spleen, but never of the intestinal canal.

14. Colitis, on which French authors so strongly insist, is frequently observed, but always limited to small sections, and it is evidently an affection of much less importance than the simultaneously occurring changes of the mucous membrane of the small intestine.

15. The mesenteric glands, with the exception of a slight redness and tumefaction in some few cases, are generally in a normal condition; and even where disease exists, it is not very important or extensive. It is only in the case of general tuberculosis, that these glands are frequently found to be in a state of partial tubercular infiltration.

16. The peculiarity and frequency of the changes in the intestinal canal on the one hand, and the non-occurrence of

many important diseases, as typhus abdominalis, intestinal tuberculosis, etc., constitute one of the most prominent characters of the pathology of the intestinal mucous membrane in infancy.—*Henle u. Pfeufer's Zeitschrift für rationelle Medizin.—Ibid.*

Fracture of the Olecranon—new method of bringing the fragments into apposition. By M. Hervez de Chégoin.—The difficulty of maintaining the two portions of a fractured olecranon in contact, without keeping the forearm in a position which, if fixedly preserved, would render its functions useless after the time necessary for consolidation had elapsed, has caused the greater number of surgeons to be satisfied with a union as little mediate as possible, by preferring the semiflexed position of the limb to its complete extension, which, however, has been adopted by some with success. The case observed by M. Baudens is well known; and perhaps after a greater number of instances, this method will be more generally tried; perhaps, too, it is more easy to bend an arm which has been kept long extended than to extend one which has been long flexed, because the muscles of flexion are more powerful than their antagonists. But the utility of a bent forearm, and the helplessness of an extended one, have till now given the preference to the semiflexed position. In the meantime, I wish to make known a plan that I have recently adopted with the greatest success.

A woman, 65 years of age, of very spare habit, fell violently on the staircase, and fractured the left olecranon a little below its middle. I did not see her till the next day; there was then considerable swelling above and within the articulation down to the middle of the forearm; while the point corresponding to the fracture was scarcely swollen, and the skin then preserved its natural color, which gave reason to suppose that the fracture, though caused by the fall, was the result not of direct violence, but of muscular action.

The fragments were separated by an interval of nearly half an inch; they were easily brought together by extension of the forearm and pressure on the upper portion, but an involuntary movement of flexion immediately separated them.

The contusion of the arm and forearm had been violent. The swelling and ecchymosis increased on the following days, and extended to the hand. The pain became more severe

on the eighth day, and the cold lotions were exchanged for emollient poultices. The joint, however, remained free from this tumefaction, which confirmed my view of the manner in which the fracture had been produced, and allowed me to see what took place between the two fragments.

On the eighth day, the interval between them was filled by a soft substance, which increased in quantity on the succeeding days, so as to rise above their level behind. It had become more liquid, and afforded an evident sense of fluctuation.

On the fifteenth day, it was much reduced, and allowed the finger to be placed between the fragments. By this time the pain and swelling of the forearm had nearly disappeared, but the ecchymosis remained down to the wrist, with a degree of induration of the soft parts. The forearm till now had been kept on a pillow in the semiflexed position without any apparatus, of which the patient was singularly apprehensive from the recollection of what she had suffered from bandages too tightly applied for a fracture of the clavicle.

The object was now to bring the fragments together without exercising any compression, and at the same time to keep the forearm semiflexed. For this purpose I contrived the following aparatus:—I placed the limb in a hollow, jointed splint, deeply excavated behind so as to leave the posterior surface of the joint free. At the upper part of this hollow I fixed a piece of elastic gum, about two inches square and a third of an inch thick, by means of narrow tapes passed from within outwards through two holes made on each side. At the two inferior angles were fixed two other tapes, which I also passed from within outwards through two holes bored on each side of the lower margin of the excavated portion of the splint. I then applied the piece of elastic gum above the upper fragment, and by gently drawing the lower tapes, brought it easily into contact with the inferior fragment. Fearing, however, that this pressure might cause some pain, I loosened the tapes a little, satisfied that a slight but continued action would overcome the muscular resistance.

The fragments became gradually approximated, merely taking care to tighten the tapes according as they became relaxed, and at the end of six weeks were so close that the finger could scarcely detect the interval between them.—About the thirtieth day, I began to give a little passive motion to the joint; this caused a little pain, not in the joint, which all along was free from any inflammatory action, but

in the soft parts of the forearm, which for a long time continued indurated by the blood infiltrated in their substance and beneath the integuments, which after two months and a half had elapsed, retained the yellow hue of old contusions. The patient, however, could execute with facility the fullest movement of flexion and extension.—*Dublin Med. Press.—Am. Jour. Med. Sci.*

Turpentine in Diabetes.—In the absence of any medicine having any immediate or certain influence over diabetes, any remedy which can mitigate and temporarily arrest, if not cure, this malady, must demand attention. A patient, aged 44 years, of a scrofulous diathesis, has been suffering from diabetes for ten months, during which period the minimum quantity of water passed daily was nearly two gallons.—About six weeks since, alarming hemoptysis appeared, (phthisis having supervened), to relieve which I administered spirits of turpentine. With the first dose, the quantity of water diminished greatly, and after she had taken two or three doses of turpentine, the urine was passed in its normal quantity, though not in its normal condition, as I could still obtain sugar by evaporation. I regarded this improvement in the diabetes as a mere coincidence, but on withdrawing the turpentine, the water again increased, and that dreadful thirst, which has been absent, returned.

As the quantity of urine passed continued to be very large, I again had recourse to the remedy, in the form of Ohio turpentine. Instantly, as by magic, the quantity of urine decreased, has remained so, and I well know that were I to omit the turpentine for one day, two gallons and a half of water would be the result.

Would it be worth while for pathologists and physicians to direct attention to the absorbent system in this disease? Is the fact of such excessive absorption of the fluids of the body, primary or secondary?—*Lancet.*

Catheterism.—The apertures in the catheter sometimes during its introduction into the bladder become completely plugged with coagulated blood, entirely preventing the flow of urine through the instrument. The following suggestion

for overcoming this difficulty, offered by Mr. W. N. Sprong, it seems to us will prove highly useful. He proposes to introduce the pipe of a common syringe into the orifice of the catheter, and by drawing up briskly the piston, the blood, he says, will be drawn into the cylinder of the catheter when the urine will flow quickly.—*Lancet.*

Instance of Retention of a Dead Ovum in the Womb for six months, without Putrefaction.—A lady, aged thirty-eight, the mother of six children, menstruted the first week in November, 1846. She supposed herself to have conceived immediately afterwards. About the middle of the following January, while walking in the street, she felt suddenly, without pain or other premonition, a fluid discharge from the vagina, which, upon hastening home, she discovered to be blood. Fourteen days after this, the breasts became flaccid, and the morning sickness, which had been gradually lessening, ceased.

On the 30th of July, about ten o'clock at night, she was seized with pains like those of labor, which steadily increased in force and frequency until early next morning, when there was expelled a dead fœtus, three inches long, with the membranes and placenta attached by a cord six inches in length. During the whole time, from the first hæmorrhage to the expulsion of the ovum, a period of six months and a half, there was more or less sanguineous discharge from the vagina. This discharge was as free from unpleasant odor as the catamenial fluid usually is, except during three days in the month April, when it was slightly putrid in its character. She consulted no physician about the matter, as the flow was unaccompanied by pain, and never so profuse as to affect her health seriously, or to prevent her from attending to the ordinary duties of the household.

There was not the slightest sign of putridity about the ovum, the odor resembling very closely that of fresh beef. The placenta was hypertrophied, three and a half inches in diameter, and an inch and a half thick, lobulated, very firm under pressure, and nearly exsanguine.

The cord was not uniform in size, nor invested by the membranes, of which a small proportion only were attached to the placenta. The vessels of the cord seem to have coalesced into one, and were impervious. The fœtus was of a variagated mahogany color, preternaturally firm to the touch, with fea-

tures just distinguishable. The fingers and toes were scarcely sufficiently developed to be counted, and there was no ossific deposit in any portion of the body.—*Med. Examiner.*

Anomalies like the foregoing scarcely admit of explanation. The rule is, that when the ovum dies, it is expelled, or, if retained, it putrefies. We seek in vain for the explanation of an exception such as this. There are very few similar cases on record.

Employment of Cold Affusions in Intermittent Fever.—M. Fleury lately presented a memoir to the Academy of Sciences on the use of cold douches in intermittent fever. He was led to these researches by the assertion of Dr. Currie, that the accession of ague might be prevented by the affusion of cold water, and that by its repetition four or five times, the disease might be entirely cured. M. Fleury has employed this means one or two hours before the expected paroxysm, in the form of a general douche, and in that of a local one to the region of the spleen.

The ends attained by the above plan he believes to be,—1. A shock exerted on the nervous system, and on the general capillary circulation. 2. The opposing of a vigorous reaction and general stimulation of the surface to the cold stage of the fever. 3. A modification of the circulation of the spleen, combating congestion of that organ.

He has pursued the treatment in eleven cases of intermittent fever. In seven of them the disease was recent, and there had been but from three to seventeen paroxysms; quinine had not been administered in any one. In two cases, the spleen preserved its normal size, in five it was enlarged: A cure was effected in all. In one, a single douche sufficed to cut short the fever. In two others two affusions were necessary to doso, and to restore to the spleen its natural dimensions. In the remaining four, affusion was practiced three times.

In those patients where two or three douches were used, the effects produced were constantly the same. By the first application, the accession was retarded two or three hours; the rigors less violent, and shorter by one-half or five-sixths the time; the heat and headache were equally lessened; and the total duration of the fit was diminished by at least one-half. Age and the type of the fever did not exercise any appreciable influence over the effects of the treatment. Where,

however, the volume of the spleen was larger, the time required for the cure was augmented. Four patients had suffered from the disease from two to eleven months, having had several relapses, and resisted the action of sulphate of quinine, and presented the anæmia, emaciation, anorexia, &c., seen in those who have been long affected by ague. Three douches were required in two of these cases, and five in one other, to remove the fever; but from eight to eleven were necessary to cause the splenic engorgement and the chachectic symptoms to disappear. In one case the liver was very greatly enlarged; but this condition disappeared by perseverance with the affusions.

M. Fleury arrives at the following conclusions:—1. In the treatment of recent intermittent fever, simple, and with little or no engorgement of the spleen, cold douches may be substituted for quinine. 2. In the treatment of old-standing ague, where several relapses have occurred, and there is considerable enlargement of the spleen, or of the liver, with a cachectic condition, cold affusions are to be preferred to quinine; for they cut short the fever, restore the viscera to their natural volume, and remove the cachexy more rapidly and more safely than quinine; the latter, in large doses, not unfrequently acting injuriously upon the nervous system, or on the digestive organs.—*London Lancet.*

Intestinal Suture.—A woman, seventy-four years of age, has just died, in the Hospital Saint Louis, of exhaustion, after parcentesis abdominis. This woman, twelve years ago, had been operated upon by M. Jobert (de Lamballe) for a strangulated femoral hernia: the intestine was incised, and a suture applied on the serous coat, on the 26th of November, 1836, in the presence of Dr. Beaumetz. The patient had recovered in a very short time. The post-mortem examination disclosed the interesting fact of perfect cicatrization having taken place. The intestine, after having been repeatedly and carefully examined *in situ*, was removed from the abdomen, detached from the mesentery, and placed on a table. A white line was discovered running obliquely from the convex to the concave border of the intestine, and ending in a sort of star, and was easily perceived upon the red ground of the intestine; it presented the usual aspect of a nodulated cicatrix. The coats of the intestine, along the cicatrix, were found neither thinned nor thickened; and after a careful washing with warm

tures just distinguishable. The fingers and toes were scarcely sufficiently developed to be counted, and there was no ossific deposit in any portion of the body.—*Med. Examiner.*

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In those patients where two or three douches were used, the effects produced were constantly the same. By the first application, the accession was retarded two or three hours; the rigors less violent, and shorter by one-half or five-sixths the time; the heat and headache were equally lessened; and the total duration of the fit was diminished by at least one-half. Age and the type of the fever did not exercise any appreciable influence over the effects of the treatment. Where,

however, the volume of the spleen was larger, the time required for the cure was augmented. Four patients had suffered from the disease from two to eleven months, having had several relapses, and resisted the action of sulphate of quinine, and presented the anæmia, emaciation, anorexia, &c., seen in those who have been long affected by ague. Three douches were required in two of these cases, and five in one other, to remove the fever; but from eight to eleven were necessary to cause the splenic engorgement and the chachectic symptoms to disappear. In one case the liver was very greatly enlarged; but this condition disappeared by perseverance with the affusions.

M. Fleury arrives at the following conclusions:—1. In the treatment of recent intermittent fever, simple, and with little or no engorgement of the spleen, cold douches may be substituted for quinine. 2. In the treatment of old-standing ague, where several relapses have occurred, and there is considerable enlargement of the spleen, or of the liver, with a cachectic condition, cold affusions are to be preferred to quinine; for they cut short the fever, restore the viscera to their natural volume, and remove the cachexy more rapidly and more safely than quinine; the latter, in large doses, not unfrequently acting injuriously upon the nervous system, or on the digestive organs.—*London Lancet.*

Intestinal Suture.—A woman, seventy-four years of age, has just died, in the Hospital Saint Louis, of exhaustion, after parcentesis abdominis. This woman, twelve years ago, had been operated upon by M. Jobert (de Lamballe) for a strangulated femoral hernia: the intestine was incised, and a suture applied on the serous coat, on the 26th of November, 1836, in the presence of Dr. Beaumetz. The patient had recovered in a very short time. The post-mortem examination disclosed the interesting fact of perfect cicatrization having taken place. The intestine, after having been repeatedly and carefully examined *in situ*, was removed from the abdomen, detached from the mesentery, and placed on a table. A white line was discovered running obliquely from the convex to the concave border of the intestine, and ending in a sort of star, and was easily perceived upon the red ground of the intestine; it presented the usual aspect of a nodulated cicatrix. The coats of the intestine, along the cicatrix, were found neither thinned nor thickened; and after a careful washing with warm

water, the same whitish line was perceived to run on the internal surface as had been noticed on the external. Two valvulæ conniventes were observed to have been cut, leaving no doubt that the line was the cicatrix of the intestinal suture applied twelve years before. The same piece of intestine was examined in many different ways, was subjected to repeated washings, held up to the light, &c., and it always exhibited the same white line, with its terminal star, as well as the two divided valvulæ conniventes. The whole of the remaining intestinal canal was opened, and examined with the greatest care; but nothing was discovered to change the opinion first formed respecting the appearances presented.

Ibid.

On the Inspiratory Voice.—The following is the *resumé* of the conclusions arrived at by M. Segond, with which he terminates his memoirs on the inspiratory voice—the voice produced by the entry of the air into the chest. He observes:—1. The production of the voice is not essentially connected with expiration; man may both speak and sing during inspiration. 2. Among persons whose larynx is practiced, the inspiratory voice corresponds in general with the expiratory, that is composed of two registers. However, in many cases, the register of the lungs is more extended in low notes; and that of the "falsetto," in the same voice, allows more acute notes to be attained than in the falsetto of the expiratory voice. 3. Pronunciation effected during inspiration is distinguished by a certain softness in the movements of articulation; many letters are altered, and the *r*, in particular, it is impossible to produce. 4. Ventriloquy is only the inspiratory voice articulated. 5. Among the animals employed by man, many employ the inspiratory voice. 6. In birds, the production of the voice, during both expiration and inspiration, explains the variety and continuity of their notes, as is particularly observable in singing birds. 7. Lastly, the voice of some batrachians is solely inspiratory; of such a character that this voice, regarded by many as opposed to the general rule, is exactly the most simple phenomenon met with in the study of the comparative physiology of the voice

To M. Segond's explanation of the continuity of the voice of birds, we must add the influence of the vast body of air which is stored up, not only in the lungs, but also throughout

the body in the everywhere extended air-cells, and which act as a reservoir of air, which may be driven through the larynx when the air in the lungs has been exhausted. In short, they have bellows superadded to those of other animals —viz, the lungs.—*Ibid.*

Therapeutic action of Cod Liver Oil.—Dr. Bennet believes that the therapeutic action of the oil is dependent essentially on its being a fatty matter, perhaps more easily assimilated to the economy than any other kind of fat. He thinks the views of Ascherson fundamentally correct, with this difference, that instead of oil and albumen uniting to form elementary cells, they only produce elementary molecules and granules, from which nuclei and cells are formed. To him it seems certain, that in chronic rheumatism and tubercular diseases, the albuminous compounds are in excess, and the oily compounds are diminished in the economy. The direct addition of the latter, therefore, is the most rational method of supplying the wants of the system.

It may reasonably be argued, that if the theory of its action as fatty matter be correct, any other kind of oil would prove just as serviceable, and certainly there are many more agreeable to the palate. Experience, however, has decided this question in the negative. The reason of this probably is, that continued doses of the purest vegetable oils, as that of olive and almond, are more or less purgative, and thereby diminish, instead of improving, the strength. It may also happen that the pungent properties of cod liver oil may have a favorable influence in retaining it on the stomach, and rendering it digestible. Lastly, it seems reasonable that an animal oil should be much more easily assimilated to the system than a vegetable one.

Since the publication of Dr. Bennett's work on cod liver oil, in 1841, the chemical views of Liebig and others have come into notice, and it is a remarkable fact that they perfectly harmonize with the histological and morphological theory therein advanced. For, whether we regard the oil as a carbonized principle of the food, as furnishing an element for respiration, or as necessary to the formation of elementary granules in a nutritive blastema, it seems equally fitted to serve the end in view.

That a purely chemical theory, however, is defective, is proved by the fact that *every* carbonized material is not fit

for the purpose. We cannot produce an increased nutrition in rheumatic or phthisical constitutions by alcohol, sugar, or starch, notwithstanding their chemical composition is so similar. The chemists may argue that these are converted into fats; and in the physiological condition so they are. In a pathological condition, however, when the digestive powers are enfeebled, this does not take place; and, in giving an animal oil ready made, we save the elementary organs the trouble, as it were, of doing this. Hence, in constitutions which cannot digest food, or convert it into the oily element, the introduction of cod liver oil, in large doses, causes the necessary principle to be easily imbibed into the lacteals, where, uniting with the albumen, it constitutes the elementary granules so necessary to nutrition.

It is on this account, that in every disease of a rheumatic or tubercular nature, attended with impairment of nutrition, emaciation, weakness, etc., cod liver oil is directly indicated. It operates by imparting to the system one of the great elements necessary for the nutrition of the animal economy, in cases where that element is essentially defective. In the hands of the rational practitioner, it is destined to be an important means of curing a class of diseases, hitherto considered of the most dangerous and fatal nature. As our knowledge of morbid processes improves, as the microscope and organic chemistry open up to us the primary alterations producing lesions of the body, the great importance of attending to the part played by the oily principle, as one of the essential elements of nutrition, will become apparent. Then, when pathology is made the companion of physiology, and both constitute the foundation for a rational system of therapeutics, the use of cod liver oil will be found as beautiful in theory as it has already been found beneficial in practice.—*Monthly Jour. and Ret.—Am. Jour. Med. Sci.*

On the Diagnostic value of Expectoration and Pain in Pulmonary Affections. By Professor ANDRAL.—Let us now inquire into the diagnostic value of expectoration in various maladies.

In acute laryngitis, simple or puriform mucus may be rejected: when a certain quantity of pus is suddenly thrown up, it points to a submucous abscess of the larynx; false membranes secreted in the larynx may also be seen, as in variola, for instance. In chronic laryngitis, blood, expecto-

rated in small quantities, indicates an ulcer of the mucous membrane; if the amount of blood be at all considerable, its source is not in the larynx.

A chronic form of croup has been described in which the patients cough up false membranes, and this circumstance often exercises a most favorable influence upon the progress of the malady. Polypus concretions, and vegetations formed in the laryngeal cavity, have been rejected; also pus from an abscess developed in the organ, as in a case published by Dr. Pravaz, of Lille; a tumor, soft and fluctuating, had been previously recognized by the introduction of the finger, and disappeared after the sudden expectoration of a certain quantity of purulent matter, with which two small concretions were also thrown up. The same author relates in his inaugural thesis a case in which two hydatids were found in the ventricles of the larynx, but we have never ourselves observed any instance of the kind.

Acute bronchitis is not, in its first period, attended with expectoration; but, as the disease progresses, the cough becomes loose, and a colorless transparent mucus, more or less viscid in its nature, is rejected, occasionally streaked with blood if the cough be violent. This matter gradually becomes less transparent, and acquires a puriform appearance, decreasing at the same time in abundance, in proportion as the case progresses towards a favorable termination. In some patiens the expectoration is puriform from the first, in others it never assumes that character. Occasionally, even the cough is dry from the beginning to the end of the disease. In chronic bronchitis, the expectoration usually consists of a slimy fluid, more or less puriform in appearance: when dyspnœa is present, this matter is very viscid, and generally spumous. It is sometimes constituted by homogeneous liquid, which bears the greatest resemblance to the expectoration in consumption, from which neither chemistry nor the microscope can distinguish it. The abundance of the rejected fluids may be very considerable, particularly in the aged, the general condition of the system suffering at the same time much less than it would, *a priori*, seem rational to suppose. The odor of the matter is not characteristic, and may accidentally acquire great fetidity. In some cases of chronic inflammation of the bronchi, no expectoration is observed; in others, a peculiarly granular mucus is thrown up, which has a remarkable tendency to solidity; and in both these cases, pulmonary emphysema often follows bronchitis.

During the first two days of pneumonia, characteristic expectoration is seldom noticed, but after this period the rejected matter is viscid, transparent, spumous, and rusty in color; as the disease advances, the fluid becomes darker and less frothy, and gradually resumes its natural hue, if the malady terminates favorably; if, on the contrary, it becomes darker and more viscid, or brown, and more fluid, the prognosis acquires greater gravity. It has been often said that where the color of the expectoration resembled that of the juice of stewed prunes, the circumstance indicated diffused suppuration of the lung; we believe that it points more to increased severity of the case than to that particular fact. In the aged, the expectoration is often of a reddish grey, and may completely be suspended sometime before a fatal issue, either from a real cessation of the morbid secretion, or more frequently from loss of power to reject it. In the pneumonia of children no expectoration takes place, and when this disease is a complication of other ailments, consumption for instance, the rejected matter is often deprived of its characteristic appearances. M. Remack, of Berlin, states ("Archieves," January, 1846), that in the expectoration of pneumonia, small concretions are rejected, constituted by fibrine, and incarcerating purulent corpuscles in their network; the shape of these concretions is the same as that of the bronchi: we have several times assured ourselves of the accuracy of this observation, which may assist considerably the diagnosis of doubtful cases. Chronic pneumonia presents no special expectoration.

Œdema pulmonis and emphysema are not attended with any characteristic appearances in this respect. At the beginning of attacks of asthma, the expectoration is usually suppressed, and returns at the close of the paroxysms. Pulmonary apoplexy usually causes hemorrhage and the rejection of a small quantity of blood, but not constantly. In gangrene of the lung, the sputa are thin, dark, and extremely fetid.

Pulmonary consumption at its various periods occasions an expectoration, the characters of which it is important to be well acquainted with. Mucus, pus, blood, concretions, etc., may be rejected, and their relative signification should be clearly understood. During the first period of phthisis, the cough is frequently dry, or followed merely by the expulsion of pure mucus; blood is often rejected at this period, with the characters which we have elsewhere described. Calculi, also, may be expectorated, formed of crude tubercular mat-

ter. When softening occurs, the appearances are usually those observed in bronchitis, the sputa being sometimes streaked with a substance of a yellowish, dead-white color, supposed to consist of detached tubercular secretion: also, occasionally granular agglomerations of tubercle are found floating in the mucus; hemoptysis may occur at this stage; but when cavities have formed in the lung the appearances are more characteristic. A large tubercular mass may be expelled suddenly, but in general its elimination is gradual. The discharge is thus formed of three parts, viz: bronchial mucus, tubercular matter, and a purulent fluid secreted by the walls of the accidental cavity. According to the relative proportions of these three elements the expectoration varies in its characters. In most subjects it separates into two layers—a semi-transparent, gummy fluid, and a more opaque, solid matter. The latter may be suspened in flakes, or float on the surface of the fluid in small round patches (nummular expectoration). At a still later period of the disease, the semi-transparent matter is no more to be found, and the matter consists merely of a thick, purulent fluid. At this stage of phthisis, hemoptysis is more rare than in the first periods. The odor or taste of the expectoration are not characteristic, in spite of the Hippocratic aphorism, that in consumption it is at first salt, and afterwards sweetish. The quantity rejected varies greatly, not only in several, but even in the same individual. Shortly before a fatal termination the expectoration may be suppressed, or become looser from the enlargement of the caverns. Microscopic examination shows, in the sputa of consumption, the presence of pus and blood corpuscles, of epithelium, of false membranes, and of pulmonary tissue. When a piece of tubercular lung is examined with the microscope numerous corpuscles can be seen, with the particular form described in the first series of these lectures. But it is very uncommon to meet with these special granulations in the sputa, being, as it would seem, dissociated before they are expelled from the chest by the efforts of coughing. It has been said, and it is quite true, that tubercular sputa sink in water, and burn with a flame when desiccated; but these characters cannot distinguish them from the sputa of bronchitis, because they result from the presence of pus, which may exist in one disease as well as in the other.

When hydatids form in the pulmonary organs, they may be expelled by expectoration. The sputa of cancer of the

lung are said to resemble gooseberry jam in color and consistency, but this fact requires further confirmation.

In diseases of the pleura, the expectoration is usually absent, or resembles that of bronchitis; but pleuritic effusions may suddenly be discharged by the bronchi, after ulceration of the surface of the lung. True pus is thus rejected, and penetration of air into the pleuritic cavity soon communicates to its contents a fetid alliaceous odor. The consecutive discharge may continue for a considerable time, and may be recalled after temporary cessation by change of position of the subject, by which a change is also effected in the relative situations of the pleuritic effusion and of the pulmonary fistula. Even after long duration, these cases are susceptible of recovery.

In diseases of the pulmonary organs, the sensibility of the patient may be modified, and furnish signs for the diagnosis.

Many acute or chronic diseases of the larynx may exist without pain, and present a striking contrast between the great change of the voice and the total absence of suffering. When pain accompanies ulcers of the larynx, it is more marked when the sore occupies the vocal chords, or is situated above them, than when it is placed below the ventricles. Affections of the trachea are seldom painful. Acute bronchitis is usually attended with a distressing sense of heat within the chest, which increases with the cough, or with the inspiration of cold air. This pain may occupy the sternal region, or be complained of between the shoulders. Pneumonia, like other inflammations of the parenchymatous organs, is seldom of itself a painful disease. "Pulmonum inflammatio," says Boerhaave, "plus affert periculi quam doloris;" a perfectly accurate remark, the stich in the side, which so usually accompanies pneumonia, being in most cases due to pleuritic complication. Many consumptive patients suffer very little, others, on the contrary, are frequently troubled with pain, due to the participation of the pleura in the disorder—a fact demonstrated by the adhesions found within the thorax of these subjects on *post-mortem* examination. Some patients feel a sort of tightness round the chest, and are fully aware, from the nature of the sensation, that their respiration is not complete; in others a sense of uneasiness is complained of in the superior part of the chest; and in these cases, on dissection, caverns are often found in these regions, separated from the pleura by very thin walls. Oc-

casionally percussion of the chest, and even auscultation with the stethoscope, causes pain in phthisis. Pain between the shoulders is very generally looked upon as a sign of consumption; we believe that the importance of this symptom has been much overrated; it seems to us to be merely a muscular pain, due to debility, and observable in most cases of chronic disease; it is, for instance, almost constant in chlorosis. Hydatids and cancer of the respiratory organs are productive of suffering only when the pleura is affected. Acute pleuritis seldom exists without pain; its intensity is variable from a trifling to a most intense stitch in the side. It is usually seated below the breast, on the affected side, and increased by motion, pressure, cough, or inspiration. It may extend to the whole thoracic wall, or be limited to the cartilaginous edges of the ribs; in diaphragmatic pleurisy, it spreads to the epigastrium, and even to the abdominal parietes. An ingenious explanation of this pain has been offered by Dr. Beau, and seems confirmed by anatomical investigation.—That gentleman attributes it to inflammation of the intercostal nerves, which, in the posterior third of their course, lie in close apposition with the pleura. Irritation of a nerve, causing pain to be felt in the region of its terminal distribution, excitement of the posterior part of these nerves in pleurisy, naturally occasions a suffering which is referred to the anterior region of the thorax, immediately below the breast.—*Lond. Med. Times.* —*Buffalo Med. Jour.*

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LECTURES ON NATURAL HISTORY.

In accordance with a request made to him by the Faculty of the College of Physicians and Surgeons of New York, Professor Agassiz delivered, in the Hall of that Institution, during the months of October and November of the past year, a series of twelve lectures on the various orders of animals. These lectures, which attracted great and admiring auditories, were reported by a stenographer for the Tribune newspaper, and subsequently issued in a pamphlet of 58 pages. They were intended as an introduction to the study of Natural History, a department of Science which is daily becoming invested with fresh attractions, and, we are happy to perceive, is adding every year in our own country to its list of votaries, foremost among whom stands the author of these Lectures. Prof. Agassiz, having come to America at the double instance of the King of Prussia, who charged him with a scientific exploration of this country, and of the Lowell Institute in Boston, before which he was invited to deliver a course of lectures, has accepted the professorship of Zoology and Geology in Harvard University and henceforth, we trust, is to devote his great faculties to the illustration of American natural history. He is not yet past the prime of life, having

been born in the year 1807, and if he should retain to a good age that remarkable vigor of mind and body which he now enjoys, he will doubtless add much to a reputation already unsurpassed by that of any living naturalist.

Professor Agassiz was educated to the profession of medicine, in which he took his degree, but so decided was his taste for natural history that while yet a student of medicine he had prepared a work on the fishes of Brazil, a folio volume in Latin, and these pursuits have drawn him entirely away from that profession. As a naturalist he is distinguished at once for powers of generalization which place him among the first of philosophers, and a talent for minute observation which has enabled him to enrich the science with numerous discoveries. No higher authority in natural history can be appealed to than that of Agassiz. It was therefore with peculiar pleasure that we read in his Lectures the following remarks on *Spontaneous Generation*—a doctrine which has been in a dying state for a long time and must now be considered dead. Speaking of intestinal worms—the *Helminthes*—he asks,

"How do they come to exist in the bodies of other animals? How can they be introduced into cavities perfectly closed? And if they cannot be introduced into those close cavities, how are they produced within those cavities? These are questions which were apparently answered in quite a satisfactory manner, and the reply was—these worms originated where they are found. That was the common solution of these questions, but is it true? No one ever made observations to prove that the animals had been produced where they were found. It was only because it could not be explained or shown how they were introduced that it was quite generally admitted that intestinal worms originated where they were found. But recent researches have explained the way in which these animals are introduced into the cavities of other animals.

"I will give the history of one of them, and then show what conclusions may be deduced.

"Steenstrup, the Swedish naturalist, discovered that at a particular season fresh-water shells had worms of a minute size, which fix themselves upon their skin and within the mucus which surrounds it. Fixing themselves by means of suckers they produce a kind of irritation. The mucus is secreted in large quantities and accumulates around them, forming a kind of cell in which they are buried. Du-

ring the time they are buried in that way, they undergo a metamorphosis similar to that of the caterpillar which is to be changed into a butterfly. The animal then penetrates into the skin, enters into the wall of the fish, into the abdominal cavity, and reaches the organs contained in that cavity, entering even into the organs themselves.

"Several other worms are found to enter the abdominal cavity in the same way. I have lately seen some of those penetrating into the gills. One of the gentlemen now present saw it within the flesh of the abdominal wall penetrating through the flesh and reaching the internal organs. It had nearly gone through the whole thickness of the fish, and was about to reach the abdominal cavity when the fish was opened.

"What then remains of the theory of spontaneous generation? It is gone forever. Every one now who attempts to reason on spontaneous generation knows that he is reasoning on what has no existence. He is reasoning on a supposition which has been scattered to the winds; because one such fact well ascertained—and you will see that similar facts have been well ascertained—is sufficient to destroy forever such a theory.

"Another case adduced in favor of spontaneous generation has been shown to be equally unfounded in fact. I allude to the infusoria. But the rotifera also lay eggs. I have seen some rotifera living in the snow at the height of eight and ten thousand feet above the level of the sea, causing the snow of higher mountains to be as red as blood and presenting a most beautiful appearance. This red snow is only an accumulation of microscopic animals belonging to the class of rotifera among infusoria. I have seen some of these laying eggs. I have had the good fortune to have been able to trace some of the changes in these eggs, not all of them, so that I mention here an imperfect series of observations, because I can stand for that; but other observers—Ehrenberg, in particular, who has made that beautiful history; in fact created the natural history of Infusoria—have completed the researches on this subject. Ehrenberg has seen rotifera laying eggs a hundred times. He has seen the young form and grow within the egg. He has not only seen them grow, but has traced them for a series of generations. Individuals which he grew from eggs he has seen laying eggs. He has seen them for three, four, six, ten generations; and now, again I ask, what remains of the theory of spontaneous generation?"

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These Lectures abound in such details, which are exceedingly interesting to the physiologist, and in fact to every class of readers. A new edition is already called for and we hope will soon appear, for the diffusion of such matter cannot fail to stimulate the taste for a branch of science which exceeds all others in the variety of its facts, and which offers to its cultivators the richest rewards. A wide field is opened in our country for the cultivation of these delightful studies, and we hail with pleasure every effort tending to awaken an interest in them.

We will close our notice of this little work with the author's opinion of the "Vestiges of Creation," a book which has had an extensive circulation not only in England but in this country. It will be seen that Professor Agassiz does not esteem it highly.

"These views," he says, speaking of the succession of races, "have not the slightest alliance with the views of a work which is very much spoken of, but which I consider entirely unworthy of notice by any serious scientific man—because it is made up of old fashioned views which have been brought before the notice of the public for half a century, by the French school, and are supported only by antiquated assertions, and by no means by facts scientifically ascertained."

It will be remembered by those who have read the Vestiges (which the Medico-Chirurgical Review pronounced to be "half a century in advance of the age") that the author refers continually to Dr. Agassiz as the highest authority upon all points of science. We wonder what he has to say respecting this sentence upon his popular book?

RUTHERFORD COUNTY MEDICAL SOCIETY.

A number of the Physicians of Rutherford county, Tennessee, met on Thursday, the 10th of August, and organized a Society under the name of the "Rutherford County Medical Association." The Society is to hold monthly meetings, at which papers are to be read, and reports made of cases and prevailing diseases. We shall expect to hear of this association hereafter, and hope that the example set by Rutherford will be followed by our brethren in all parts of the south-western country where such associations can be maintained. We shall have the American Medical Association at Cincinnati in 1850, and it is

ring the time they are buried in that way, they undergo a metamorphosis similar to that of the caterpillar which is to be changed into a butterfly. The animal then penetrates into the skin, enters into the wall of the fish, into the abdominal cavity, and reaches the organs contained in that cavity, entering even into the organs themselves.

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"Another case adduced in favor of spontaneous generation has been shown to be equally unfounded in fact. I allude to the infusoria. But the rotifera also lay eggs. I have seen some rotifera living in the snow at the height of eight and ten thousand feet above the level of the sea, causing the snow of higher mountains to be as red as blood and presenting a most beautiful appearance. This red snow is only an accumulation of microscopic animals belonging to the class of rotifera among infusoria. I have seen some of these laying eggs. I have had the good fortune to have been able to trace some of the changes in these eggs, not all of them, so that I mention here an imperfect series of observations, because I can stand for that; but other observers—Ehrenberg, in particular, who has made that beautiful history; in fact created the natural history of Infusoria—have completed the researches on this subject. Ehrenberg has seen rotifera laying eggs a hundred times. He has seen the young form and grow within the egg. He has not only seen them grow, but has traced them for a series of generations. Individuals which he grew from eggs he has seen laying eggs. He has seen them for three, four, six, ten generations; and now, again I ask, what remains of the theory of spontaneous generation?"

Stat nominis umbra. Indeed it *is* "gone forever."

These Lectures abound in such details, which are exceedingly interesting to the physiologist, and in fact to every class of readers. A new edition is already called for and we hope will soon appear, for the diffusion of such matter cannot fail to stimulate the taste for a branch of science which exceeds all others in the variety of its facts, and which offers to its cultivators the richest rewards. A wide field is opened in our country for the cultivation of these delightful studies, and we hail with pleasure every effort tending to awaken an interest in them.

We will close our notice of this little work with the author's opinion of the "Vestiges of Creation," a book which has had an extensive circulation not only in England but in this country. It will be seen that Professor Agassiz does not esteem it highly.

"These views," he says, speaking of the succession of races, "have not the slightest alliance with the views of a work which is very much spoken of, but which I consider entirely unworthy of notice by any serious scientific man—because it is made up of old-fashioned views which have been brought before the notice of the public for half a century, by the French school, and are supported only by antiquated assertions, and by no means by facts scientifically ascertained."

It will be remembered by those who have read the Vestiges (which the Medico-Chirurgical Review pronounced to be "half a century in advance of the age") that the author refers continually to Dr. Agassiz as the highest authority upon all points of science. We wonder what he has to say respecting this sentence upon his popular book?

RUTHERFORD COUNTY MEDICAL SOCIETY.

A number of the Physicians of Rutherford county, Tennessee, met on Thursday, the 10th of August, and organized a Society under the name of the "Rutherford County Medical Association." The Society is to hold monthly meetings, at which papers are to be read, and reports made of cases and prevailing diseases. We shall expect to hear of this association hereafter, and hope that the example set by Rutherford will be followed by our brethren in all parts of the south-western country where such associations can be maintained. We shall have the American Medical Association at Cincinnati in 1850, and it is

much to be desired that the south-west should be fully represented in it, which can only be done by the organization of county societies. In every point of view such associations are desirable.

OHIO MEDICAL JOURNAL.

The unavoidable delay in the publication of our present number gives us an opportunity, which we heartly embrace, to notice the appearance of a new Journal under the above title. The first number was issued on the first of this month and affords evidence of editorial industry and tact, as well as of active co-operation by a strong corps of contributors. With such qualities in the editor, and the continuance of such support on the part of his correspondents, the success of his Journal is sure. We hope he may be fortunate enough to secure such co-operation, without which it is safe to say no journal can continue long in vigorous or useful existence.

CHOLERA.

This scourge appears to be making advances in the direction of this country. The last Steamer brings intelligence that it had reached London. At previous dates it was ravaging Russia.

UNIVERSITY OF LOUISVILLE.

Students are already coming in and matriculating in the Medical Department of this University. The lectures commence this season, the middle of October. The attention of students is particularly invited to this change of time.

THE

WESTERN JOURNAL

OF

MEDICINE AND SURGERY.

EDITORS.

DANIEL DRAKE. M. D.,

PROFESSOR OF PATHOLOGY AND THE PRACTICE OF MEDICINE IN THE UNIVERSITY OF LOUISVILLE.

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PROFESSOR OF CHEMISTRY AND PHARMACY IN THE SAME

THOMAS W. COLESCOTT. M. D

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